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WILDLIFE REVIEW

NUMBER 109 MARCH 1963

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, assistant editor.

NATURAL RESOURCES & CLIMATE

Warner, Richard E. (Univ. Calif., Berkeley.) THE DISMEMBERED WILDERNESS. Pacific Discovery 15(4): 2-10, illus. July-Aug. 1962. WR 109: 2

In 1924 the Gila Primitive Area was established in the Gila National Forest, N. Mex. Studies in 1930 resulted in boundary descriptions encompassing 695,000 acres of wilderness country. Mechanized deer hunters claimed a part of the area so that its total size was cut to 438,626 acres in 1953. "Game departments, with yearly subsidies from federal Pittman-Robertson funds burning in their pockets, need projects, and the wildernesses--undeveloped, unmanaged--offer ideal spots for their investments."

SOILS

Krusekopf, H. H., and others. SOIL SURVEY OF BOONE COUNTY, MISSOURI. SCS, Ser. 1951, no. 12. i + 39 p., 13 figs. + folded colored maps. Dec. 1962. Sold by Supt. Documents. WR 109: 2

CONSERVATION EDUCATION

Cain, Stanley A. (Univ. Mich., Ann Arbor.) THE RECREATION BOOM--A CHALLENGE TO CONSERVATION EDUCATION. Trans. 27th N. Am. Wildl. Conf. p. 435-444. 1962. WR 109: 2

In our economy where more than one-third of the Gross National Product is derived from services, it must be recognized that services as well as commodities flow from our natural resources and that recreational use is an important service. The depletive impact of resource use on the resource base must be minimized, and this can best be attained by education toward a conservation consciousness.

Carlozzi, Carl A. (Cornell Univ., Ithaca, N. Y.) HOME STUDY COURSES IN CONSERVATION--WHAT ARE THEIR POTENTIALS? Trans. 27th N. Am. Wildl. Conf. p. 471-478. 1962. WR 109: 2

Of 170 enrollees in a home study course in conservation, 133 completed the assignments. Enrollees varied in educational background from one having never attended school beyond the fourth grade to 14 having completed work beyond the baccalaureate degree. Ages varied from 16 to 73. All persons who completed the course were interested in outdoor activities such as hunting, fishing, bird watching, camping, hiking, or nature photography. It is concluded that home study courses should be used in presenting the message of conservation to the public.

Dale, Roger D. (Conserv. Foundation, 30 E. 40th St., New York City.) BROADENING GRADUATE CONSERVATION TRAINING. Trans. 27th N. Am. Wildl. Conf. p. 459-470. 1962. WR 109: 2

Conservation is not a profession, but it is a viewpoint needed to broaden the base of a professional specialty. Efforts towards and progress in making a conservation consciousness available to students in many professions are reported.

Hanselman, David L. (Ohio Dept. Nat. Resources, Columbus.) RADIO AND TELEVISION IN OHIO'S CONSERVATION PROGRAM. Trans. 27th N. Am. Wildl. Conf. p. 424-434. 1962. WR 109: 2

The Ohio Department of Natural Resources is nearing the end of its second year of radio and television operations. Information is given on the mechanics, cost, and effectiveness of this program. Air time is not purchased--the broadcasters use the conservation material as a public service.

CONSERVATION EDUCATION--Continued

Shomon, Joseph J. (Natl. Audubon Soc., N. Y.) RESOURCE USE EDUCATION IN URBAN AREAS: A CASE FOR COMMUNITY NATURE AND CONSERVATION CENTERS. Trans. 27th N. Am. Wildl. Conf. p. 445-450. 1962. WR 109: 3

A plea is made for the establishment of local nature centers such as those operated by the National Audubon Society. Local communities have already set aside more than 18,000 acres of natural land for such centers and have spent $10,254,000 for land, buildings, and equipment.

Smith, Eldon H., and Jack H. Berryman. (Mont. State Coll., Bozeman.) WILDLIFE EXTENSION--PAST, PRESENT, AND FUTURE. Trans. 27th N. Am. Wildl. Conf. p. 450-459. 1962. WR 109: 3

Wildlife specialists are employed on the Cooperative Extension Service staffs in 17 states. The general effectiveness of the wildlife specialist is appraised, and recommendations for increasing this effectiveness are made.

BIBLIOGRAPHIES, DIRECTORIES, BIOGRAPHY, HISTORY

Christensen, Earl M. (Brigham Young Univ., Provo, Utah.) BIBLIOGRAPHY OF UTAH AQUATIC BIOLOGY, NO. II. Great Basin Nat. 22(1-3): 32-53. 15 Oct. 1962. WR 109: 3

This second bibliography contains 390 references dated prior to 31 Dec. 1961, and supplements the 243-item bibliography listed in WR 103: 3.

Thalenhorst, W. [GERMAN LITERATURE ON FOREST PROTECTION IN 1959-60. IV. CONTROL MEASURES AGAINST ANIMAL PESTS.] Z. PflKrankh. 69(8): 465-476. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 5 Nov. 1962.] WR 109: 3

In German. A review dealing mainly with literature on the control of insects, in the sections: biological control (by birds, bats, and ants); cultural methods (silviculture and use of fertilizers); chemical and technical methods (insecticides, and the use of toxaphene and endrin against Microtus agrestis).--Courtesy/ Frank M. Johnson.

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Baldasseroni, V. CONSIDERAZIONI SULLA MAMMALOFAUNA E L'AVIFAUNA DELLE NOSTRE FORESTE. [THE MAMMALS AND BIRDS OF ITALIAN FORESTS.] Ann. Accad. Ital. Sci. For. 10: 173-183. 1961. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 10 Sept. 1962.] WR 109: 3

In Italian with French summary. Discusses the progressive impoverishment of the vertebrate fauna of Italian forests.--Courtesy/ Frank M. Johnson.

de Vos, A. CHANGES IN THE DISTRIBUTION OF MAMMALS AND BIRDS IN THE GREAT LAKES AREA. Canadian Audubon 24(1): 18-23, 6 figs. Jan.-Feb. 1962. WR 109: 3

"It seems, therefore, that because of a more rapid maturing of the forests, the carrying capacity of the range is deteriorating for deer and moose, and improving for woodland caribou.... Those forests which contain a wide diversity of age classes and an adequate mixture of coniferous and deciduous species will have a particularly high potential for grouse."

Harper, Francis. CHANGES IN CLIMATE, FAUNAL DISTRIBUTION, AND LIFE ZONES IN THE UNGAVA PENINSULA. Polar Notes, Dartmouth Coll. Lib. (Hanover) 3: 20-41. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 3

Lauckhart, J. Burton. (Wash. State Dept. Game, Olympia.) WILDLIFE POPULATION FUNDAMENTALS. Trans. 27th N. Am. Wildl. Conf. p. 233-242. 1962. WR 109: 4

The idea that reproduction replaces loss should be supplanted by the concept that reproduction causes loss. The number of animals annually dying in a stable population must equal the number born, and high production causes heavy loss and short life. Populations, with few exceptions, press carrying capacity each year. Food may be the most important capacity-limiting factor. Animals can select more nutritious plants or parts of plants, and plants are low in nutritive value because animals have continually killed the most nutritious varieties. Social stress as a natural animal control does not seem possible, because there is no way evolution could have created such a control mechanism.

Manning, T. H., and A. H. Macpherson. (Canadian Wildl. Serv., Ottawa.) A BIOLOGICAL INVESTIGATION OF PRINCE OF WALES ISLAND, NORTHWEST TERRITORY. Trans. Roy. Canadian Inst. 33(2): 116-239. 1961 [1962]. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 4

Narrative of 4 months spent in the Arctic for the National Museum of Canada in summer of 1958--a detailed study of the birds (36 species) and mammals (14 species) collected or observed, with notes on 2 species of fish and a list of 56 species of plants.--E. H. Craigie.

Wolff, J. von. WILD LIFE IN ETHIOPIA. Ethiop. For. Rev. (2): 3-13, 44 figs., 8 maps. 1961 [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 15 Oct. 1962.] WR 109: 4

Lists the systematic and local names of more than 68 species or groups, with notes on the more important ones.--Courtesy/ Frank M. Johnson.

Zemskii, V. A. [THE ANIMAL WORLD OF THE ANTARCTIC: WILD ANIMALS AND BIRDS.] Moscow Univ. (Moscow). 180 p., illus., maps. 1960. Pr. 5 rubles 30 kopecks. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1962, no. 6I279K.] WR 109: 4

[In Russian.]

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Hall, B. P., and R. E. Moreau. (Brit. Museum (Nat. Hist.), Kensington, England.) A STUDY OF RARE BIRDS OF AFRICA. Bull. Brit. Museum (Nat. Hist.) Zool. 8(7): 315-378, map. 1962. [From Biol. Abstr. 40(5), 1962.] WR 109: 4

The rare birds are defined as those species which do not have a range of more than 250 miles in any direction, plus 13 others that merit special consideration since they are known from very few specimens and/or 2 localities remote from each other. Each of the 96 selected spp. is discussed separately with respect to its range, ecology and status. The spp. are summarized in (a) taxonomic categories, (b) by area and ecological association. It is found that more than half the rare spp. belong to montane islands, especially montane forest and that there are concentrations of rarities in western Angola and coastal Kenya and Tanganyika, 3 in both southern Abyssinia and Somalia, but relatively few in west and southern Africa. The selected spp. contain examples of spp. in many differing stages of the evolutionary scale, some being apparently members of superspecies and some of possibly hybrid origin. Of the 96 rare birds only 17 are non-passerine, including 5 francolins. Among the passerines the warblers and the sunbirds provide the highest percentage of rare spp. About 15-20 of the rare spp. may consist of less than a few thousand individuals and some of no more than a few hundred. A greater percentage of spp. rank as "rare" in the Ethiopian Region than in the Nearctic, Palaearctic and Australian.--Authors.

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Edson, E. F., and D. N. Noakes. (Chesterford Park Res. Sta., Essex, England.) THE COMPARATIVE TOXICITY OF SIX ORGANOPHOSPHORUS INSECTICIDES IN THE RAT. Toxicol. & Appl. Pharmacol. 2(5): 523-539, illus. 1960. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 5

Studies have been made under standardized experimental conditions, on the oral, dermal, and dietary toxicity to the rat of commercial formulations of 6 organophosphate insecticides, parathion being compared with five more recent products of industrial research, i.e., Phenkaptone, demeton-methyl, dimethoate, Diazinon, and Depterex.

Hazeltine, William. SAFETY OF WILDLIFE IS IMPORTANT TO PLANNERS OF GNAT-CONTROL PROGRAM. Agr. Chem. 17(12): 12-14, 76, illus. Dec. 1962. WR 109: 5

Clear Lake, in Lake County, Calif., covering 41,000 acres, was treated in 1949, 1954 and 1957 with Rhothane (DDD) to control a non-biting midge (Chaoborus astictopus) annoying to vacationers. Following the 1957 treatment it became apparent that the insecticide was being concentrated by various organisms in the food chain, resulting in high concentrations in fish and fish-eating birds. Some grebes were killed, presumably by the insecticide. In 1961, methyl parathion was found to be effective for control of the objectionable midge. Three applications of methyl parathion were made to Clear Lake in 1962. Other forms of life, even mayflies, appeared to be unaffected by the treatment. An evaluation of the program indicated that control of the midge was good.

Paul, Robert M. (Dept. Interior, Washington, D. C.) THE FEDERAL PEST CONTROL REVIEW BOARD. Trans. 27th N. Am. Wildl. Conf. p. 184-191. 1962. WR 109: 5

The Federal Pest Control Review Board was established on June 22, 1961, to review pest control programs in which there is active participation on the part of the Federal Government to insure that effective, economical and safe procedures are followed. The membership of the Board consists of two representatives designated by the Secretaries of the four Federal Departments that are directly concerned. As the annual program of each agency is reviewed, the Secretary of the Department is advised regarding the Board's findings and its recommendations for any needed modifications in pest control materials and techniques for their application. An important part of the Board's work is encouraging research to find substitute pest control techniques that are less hazardous, and to develop adequate knowledge of the effects of pesticides on forms of life other than man and the target species. An expanded chemical screening program is under way at the Wildlife Research Center in Denver to help fill this gap.--Auth. abstr.

Seaman, D. E. (USDA, Fort Lauderdale, Fla.) RECENT DEVELOPMENTS IN THE USE OF PESTICIDES / CONTROL OF AQUATIC WEEDS. Summary Fourth Biennial Public Health Vector Conf. p. 81-85. 1962. WR 109: 5

A brief account of the most effective methods for controlling unwanted aquatic vegetation.

Springer, Paul F. (Patuxent Wildl. Res. Center, Laurel, Md.) RECENT DEVELOPMENTS IN THE USE OF PESTICIDES / INTERESTS OF FISH AND WILDLIFE AGENCIES. Summary Fourth Biennial Public Health Vector Conf. p. 91-94. 1962. WR 109: 5

A brief general review of the current pesticide-wildlife problem.

WILDLIFE--PARASITES & DISEASES

Bouvier, G., H. Burgisser, and P. A. Schneider. OBSERVATIONS SUR LES MALADIES DU GIBIER ET DES ANIMAUX SAUVAGES FAITES EN 1959 ET 1960. [DISEASES OF GAME AND WILD ANIMALS DURING 1959 AND 1960.] Schweiz. Arch. Tierheilk. 104: 440-450. 1962. [From Vet. Bull. 32(12), 1962.] WR 109: 5

Summary of results of autopsies of 791 carcasses. Species examined included deer, chamois, hares, small rodents, foxes, martens, polecats, stoats and wild birds.

Dorer, R. E. (Va. Dept. Health, Norfolk.) STATE VECTOR CONTROL RESEARCH PROGRAMS / VIRGINIA. Summary Fourth Biennial Public Health Vector Conf. p. 155-157. 1962. WR 109: 6

Virulent strains of Rickettsia rickettsii were isolated from a cottontail (Sylvilagus floridanus), two meadow mice (Microtus pennsylvanicus) and an opossum (Didelphis virginiana).

Mohr, Carl O., and William A. Stumpf. (Univ. Calif., Berkeley.) RELATION OF ECTOPARASITE LOAD TO HOST SIZE AND HOME AREA IN SMALL MAMMALS AND BIRDS. Trans. 27th N. Am. Wildl. Conf. p. 174-183, 2 figs. 1962. WR 109: 6

Home ranges of meadow mice, Microtus californicus, were determined by live-trapping, marking, releasing and retrapping, at 10-foot intervals in a meadow in San Mateo County, Calif., based on 1,200 observations. The relation of infestation by chiggers (Trombiculidae) to host size and home-range size was determined. This was compared to reported infestations by ticks (Ixodidae) and chiggers on birds and other small mammals and to reported size and shape of their home ranges. Home ranges of the ground-inhabiting mice were decidedly narrow, those of ground-inhabiting birds moderately narrow, and those of tree and shrub-inhabiting birds nearly circular. The shape of the home range apparently depends on the suitability of the habitat for the animal in question (being longer rather than simply larger when conditions are poor and more compact and possibly smaller when good). Infestation by chiggers and ticks on birds and mammals is measurably influenced by the size of the host and its home range. Birds appear to bear more ectoparasites which are common to birds and mammals than do mammals of similar weight in the same habitat. Small birds tend to bear more in proportion to their size than large birds, possibly because of more intensive use or larger territory.--From abstr. by Carl O. Mohr.

Schnurrenberger, Paul R., Frank Burson, Howard E. Stegmiller, Ralph A. Masterson, and Frederick H. Wentworth. (Ohio Dept. Health, Columbus.) PRELIMINARY STUDIES ON WILDLIFE LEPTOSPIROSIS IN A MICRO-ENVIRONMENT. Wildl. Disease no. 32. 16 p., 3 figs. Dec. 1962. WR 109: 6

On a farm in Ohio where an outbreak of bovine leptospirosis had previously occurred, wildlife were examined by serological and cultural methods for evidence of leptospiral infection. Ten of 48 specimens (20.8%) examined serologically showed agglutinating antibodies against one or more of the 11 serotypes employed. Wildlife species showing serological evidence of infection were: domestic cat, house mouse, opossum, cottontail rabbit, skunk, meadow vole and woodchuck. The possibility of isolated pockets of infection in wildlife on various parts of the farm and potential means of spread to other areas or to domestic animals are discussed.--From auth. abstr.

Singh, Kunwar Suresh. (Post Graduate Coll. Animal Sci., Mukteswar-Kumaun, U.P., India.) HELMINTHS OF INDIA. PART III. NEMATODA. Wildl. Disease no. 29. 33 p. Dec. 1962. WR 109: 6

[Numbers 29 and 30 on one microcard.] Abstract: This is the third installment of a checklist of the parasites reported in the literature from all animals in India. The Nematoda include parasites reported from domestic mammals, from all birds, reptiles, amphibians and fishes. 116 references.

Singh, Kunwar Suresh. (Post Graduate Coll. Animal Sci., Mukteswar-Kumaun, U.P., India.) HELMINTHS OF INDIA. PART IV. ACANTHOCEPHALA. Wildl. Disease no. 30. 6 p. Dec. 1962. WR 109: 6

[Numbers 29 and 30 on one microcard.] Abstract: This is the fourth installment of a checklist of the parasites reported in the literature from all animals in India. The Acanthocephala include parasites reported from domestic mammals, from all birds, reptiles, amphibians and fishes. 37 references.

Wright, J. F. (Balcones Res. Center, Austin, Texas.) CHEMICAL RESTRAINT OF EXOTIC ANIMALS IN A DISEASE REGULATORY PROGRAM. Canadian J. Comp. Med. & Vet. Sci. 27(1): 13-15. Jan. 1963. WR 109: 7

The African red tick (Rhipicephalus evertsi Neuman) is widely distributed in Africa but had never been identified in North America until September 1960 when it was found in a wild animal compound in Florida. The red tick is a vector of cattle fever (piroplasmosis) and several other exotic diseases including the highly fatal East Coast fever. The 130 acre compound contained more than 300 African and Asian animals, including giraffes, camels, zebras, elands, nilghais, blackbuck, aoudads, ostriches and Abyssinian asses. To determine the extent of the infestation, representative numbers of animals were immobilized with succinylcholine chloride for visual and manual examination. The grounds were treated with 2 lbs. of DDT per acre at three week intervals for six weeks and another group of animals were immobilized to determine the efficacy of the program. In all more than 50 wild animals were successfully immobilized with succinylcholine.--Auth. summ.

WILDLIFE--BIOMETRICS

Cole, LaMont C. (Cornell Univ., Ithaca, N. Y.) A CLOSED SEQUENTIAL TEST DESIGN FOR TOLERATION EXPERIMENTS. Ecology 43(4): 749-753, 1 fig. Autumn 1962. WR 109: 7

If the ability of two forms to withstand experimental stress is being compared as all or none responses, the experimenter can draw a sample and, on the basis of the results, decide on course of action. When the characteristics of the particular experimental design indicate that the null hypothesis (with a predetermined level of confidence) can be accepted or rejected, sampling can cease.

Evans, Thomas C. (Va. Polytech. Inst., Blacksburg.) PROBLEMS IN FOREST HABITAT MEASUREMENT. Trans. 27th N. Am. Wildl. Conf. p. 362-368. 1962. WR 109: 7

The working relationship between the biologist and statistician is discussed and the roles of each in designing and conducting an experiment and analyzing the data are outlined. The first step is a clear statement of the problem, then the statistician outlines techniques available. The biologist must consider the costs of these techniques and make a decision on which to use. The statistician designs the experiment and may even help with or supervise field work. When the data are collected, the statistician may analyze and interpret them for the biologist.--Mary F. Myers.

Seber, G. A. F. (Stat. Lab., Univ. Manchester.) THE MULTI-SAMPLE SINGLE RECAPTURE CENSUS. Biometrika 49(3&4): 339-350. Dec. 1962. WR 109: 7

"The aim of this paper is to set up a capture-recapture method for estimating the population parameters for a population in which there is both 'immigration' (including birth) and 'death' (including emigration).... The main advantage of the model considered...is that the individuals are only recaptured once and are then removed from the population as, for example, in commercial fishing and trapping."--V. Schultz.

WILDLIFE--TECHNIQUES

de Caire, Edwin. (Univ. Witwatersrand, Johannesburg, S. Africa.) A METHOD OF RECORDING THE FEEDING BEHAVIOUR OF A RAT WHICH HAS THE CHOICE OF SEVERAL FEEDING TROUGHS. S. African J. Med. Sci. 26(4): 105-108, illus. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 7

Edgar, R. L. (Animal Ecol. Div., Dept. Sci. & Industrial Res., New Zealand.) A COMPACT LIVE TRAP FOR SMALL MAMMALS. J. Mammal. 43(4): 547-550, 2 figs. Nov. 1962. WR 109: 8

Specifications are given for constructing a collapsible sheet metal automatic small mammal-trap 30 x 10 x 10 cm in size. Sheet metal workers' equipment is needed in construction of the trap.

Fisler, George F. (Univ. Calif., Carmel Valley.) THE USE OF WATER AS BAIT FOR MICROTUS CALIFORNICUS. J. Mammal. 43(4): 555-556. Nov. 1962. WR 109: 8

Water was successfully used for bait in an arid situation.

MacKay, Arthur A. (McGill Univ., Montreal, Quebec.) AN EASY METHOD OF TRAPPING SMALL TAIGA MAMMALS IN WINTER. J. Mammal. 43(4): 556-557, 1 fig. Nov. 1962. WR 109: 8

Snap traps were attached to strings and placed in runways at the bottom of holes dug into the snow. Cardboard covers were then placed over the holes on top of the snow.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Allan, Philip F., and Ivan McKeever. (SCS, Ithaca, N. Y.) MULTIPLE PURPOSE DEVELOPMENTS IN SMALL WATERSHEDS. Trans. 27th N. Am. Wildl. Conf. p. 122-132, 3 figs. 1962. WR 109: 8

Opportunities for fish, wildlife and recreational developments in small watershed (PL-566) projects are discussed, with an outline of the various kinds of developments permissable in such projects. Criteria for and types of fish and wildlife enhancements and methods of financing cost-shared developments are cited and a summary of watershed developments to date tabulated for the Northeast. Examples from northwestern Pa. are cited to show how efforts in 6 watersheds by various local, state and Federal agencies are integrated to attain multiple use of the land and water. Particular emphasis is given to the relationship of these watersheds to state and Federal waterfowl refuges on a part of the Eastern Flyway and to how a large human population will benefit from the developments.--Philip F. Allan.

Anderson, John M. (Winous Point Shooting Club, Port Clinton, Ohio.) CAN BIOLOGISTS BREAK THE BOTTLENECK? Trans. 27th N. Am. Wildl. Conf. p. 479-484. 1962. WR 109: 8

Biologists were trained for the job, but final responsibility for wildlife management is usually in hands of men with no background in biology. Wildlife commissions generally do what is popular with the public, regardless of biologists. Paying landowners handsomely for wildlife crop would encourage them to seek professional advice. Enforcement sections in most states should be reduced in number, but better trained and better paid, if they are to continue to be educators. Information and education sections should teach public that land use determines plant quality and quantity, which determines animal life, so landowners are the real wildlife managers, thus dispelling the illusion that state governments can manage and produce wildlife. Government must manage its own land, but otherwise should stop pretense at management, and do a competent job of research, education, and enforcement.--Auth. abstr.

Feltner, George. (Colo. Dept. Game & Fish, 1530 Sherman St., Denver 1.) A LOOK BACK / A 65-YEAR HISTORY OF THE COLORADO GAME AND FISH DEPARTMENT. 1961 Annual Report of the Colorado Game and Fish Department. 65 p., illus. 1962. WR 109: 8

This is an excellent report which traces the history of the Colo. Game and Fish Department and the management of fish and wildlife resources from 1897 until the present. Although the title indicates that coverage extended back only 65 years or to 1897, there are ten pages of delightful reading material covering the period from 1861 to 1897.

Komarek, Roy, editor. PROCEEDINGS FIRST ANNUAL TALL TIMBERS FIRE ECOLOGY CONFERENCE, 1-2 MARCH 1962, TALLAHASSEE, FLORIDA. Tall Timbers Res. Sta. (Tallahassee, Fla.). ix + 186 p., 7 figs. 1962. WR 109: 9

Includes the following papers: Fire impressions, H. L. Beadel; The use of fire: An historical background, E. V. Komarek, Sr.; Historical notes on the relation of fires to forests, Roland M. Harper; Use of fire in pine forests and game lands of the deep Southeast, H. L. Stoddard, Sr.; The Florida Forest Service and controlled burning, R. A. Bonninghausen; Fire and vegetation in the Everglades, William B. Robertson; Fire and vegetation of arid lands, Walter S. Phillips; Fire ecology, E. V. Komarek, Sr.; The use of prescribed fire in the silviculture of loblolly pine, Thomas Lotti; Use of fire on Southeastern wildlife refuges, Lawrence S. Givens; Forest land management and the use of fire, R. A. Bonninghausen; Some techniques of controlled burning in the deep Southeast, Herbert L. Stoddard, Sr.; Is prescribed burning paying off?, Robert W. Cooper; Forest Service policy for controlled use of fire, Glenn A. Thompson. Discussion of papers is appended.

Matthews, L. Harrison. (Zool. Soc., London, England.) A NEW DEVELOPMENT IN THE CONSERVATION OF AFRICAN ANIMALS. Advance. Sci. 18(76): 581-585. 1962. [From Biol. Abstr. 40(2), 1962.] WR 109: 9

This is an account of various attempts which are being made to organize experimental cropping and marketing of game animals. Figures are given which indicate that in many cases game will give a higher yield of meat and income than cattle, in a given area.

Mitchell, B. L. ECOLOGICAL ASPECTS OF GAME CONTROL MEASURES IN AFRICAN WILDERNESS AND FORESTED AREAS. Kirkia (Salisbury) 1: 120-128 + 2 pls. 1961. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 16 Apr. 1962.] WR 109: 9

WILDLIFE--HUNTING AREAS & PROBLEMS

Durrell, James. (Dept. Fish & Wildl. Resources, Frankfort, Ky.) SURVEY REVEALS STARTLING FACTS ON 1961 SEASON. Ky. Happy Hunting Ground 19(1): 28-29. 1962. WR 109: 9

In 1961-62, hunting license sales declined 9% from those of 1960-61 or about 23% from the peak in 1957. Rabbit hunters declined 15%, squirrel hunters 7%, and duck stamp sales 31%. On the other hand, there was an increase of bobwhite hunters (15%). Crow, woodchuck, dove, and raccoon hunters increased significantly, and more than twice as many people reported they hunted foxes [as compared with 1960-61]. Squirrels absorbed 31% of the hunting pressure and are still the most important game species despite a decline of 20% in the kill.

McKean, John. (Oreg. State Game Comm., Portland 8.) TOMORROW'S HUNTING. Oreg. State Game Comm. Bull. 18(1): 3-5, 8, 1 fig. Jan. 1963. WR 109: 9

An area of 4,266 acres on the Deschutes National Forest was fenced against deer to make it possible to re-establish a pine forest. The cost of fencing was about $65,000. A graph is given showing annual estimates of the Oregon mule deer population, number of deer hunters and annual harvest during 1948-62.

WILDLIFE--ECONOMIC & OTHER VALUES

Bolle, Arnold W., and Richard D. Taber. (Mont. State Univ., Missoula.) ECONOMIC ASPECTS OF WILDLIFE ABUNDANCE ON PRIVATE LANDS. Trans. 27th N. Am. Wildl. Conf. p. 255-267. 1962. WR 109: 9

Preliminary report on a survey of the economic value to the landowner of the wildlife on his land. In the U. S. much waterfowl hunting is currently worth $10.00 to $100.00/acre/year. The same value for range and forest is $0.10 to $1.00. Farmland, which should fall between these, actually brings little income from hunting. The reasons for this are discussed and the results in

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terms of habitat deterioration described. It is proposed that in order to encourage the enhancement of wildlife habitat on farmland, public agencies encourage an economic return to the farmer from hunting.--R. D. Taber.

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Howard, Walter E. (Univ. Calif., Davis.) MEANS OF IMPROVING THE STATUS OF VERTEBRATE CONTROL. Trans. 27th N. Am. Wildl. Conf. p. 139-150. 1962. WR 109: 10

Vertebrate pest control is essential to our society, but wildlife biologists and administrators are generally disinterested. It was suggested that an international society of vertebrate pest control should be formed.

Marvin, M. Ya., and G. A. Sokolova. [EXPERIMENTS IN THE USE OF POISONOUS PLANTS FOR RODENT CONTROL.] Trudy Ural'sk. Otdel. Moscow Obshch. Ispit. Prirody 2: 54-60. 1959. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1962, no. 9I206.] WR 109: 10

Translation [from Russian abstract]. Tests were made of the action on rodents of 15 spp. of poisonous plants collected in Sverdlovsk oblast. Bait was prepared by moistening grain (oats, barley, wheat) with extracts of the poisoned plants. The results showed that some degree of toxicity for rats and house mice is possessed by Veratrum lobelianum, Cicuta virosa, Conium maculatum, Hyoscyamus niger, Polygonum hydropiper, and Ranunculus sceleratus.

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

Alberta. ANNUAL REPORT OF THE DEPARTMENT OF LANDS AND FORESTS...FOR THE FISCAL YEAR ENDED MARCH 31ST, 1962. Queen's Printer (Edmonton). 156 p., illus. Nov. 1962. WR 109: 10

The Fish and Wildlife Administration Report (pages 74-106) contains summary reports on fish and wildlife officer's school, seasons and hunter interest, wildlife damage insurance, and management and research in: wildlife, sport fisheries, and commercial fisheries. A wildlife damage insurance plan was initiated in 1960-61, but it met with little acceptance. Farmers are to pay 3% of the value of their insured crop, and $1.00 is assessed against each resident big game and game bird licence. Fur harvest for the season of 1961-62 is tabulated. A total of 1,526,086 pelts was harvested, valued at $1,396,365.78. Beaver and squirrel ranked highest in pelt value. Beaver pelts were valued at $549,418.25; squirrels--$356,498.45.

Arizona. [ARIZONA GAME AND FISH DEPT. ANNUAL REPORT, 1961-1962.] Ariz. Wildl. Views 10(1): 1-55, illus. Jan. 1963. WR 109: 10

Entire issue devoted to annual report. Pages 4-14 deal with game management and include reports on the number of hunters and their success hunting deer, elk, bighorn, cottontail, squirrel, dove, and quail. Activities are also reported on trapping and transplanting turkeys; development of water supplies for deer, antelope and turkey; waterfowl management; and buffalo management. Activities and some of the results of research by the Dept. of Game & Fish are summarized on pages 14-16 (chiefly on quail, javelina, and deer). On pages 17 through 19 the research activities of the Ariz. Coop. Wildl. Res. Unit are summarized. Research is reported on javelina, coati-mundi, doves, mule deer and fish.

Maryland. MARYLAND BOARD OF NATURAL RESOURCES / SEVENTEENTH ANNUAL REPORT / 1960. xiv + 165 p. [1962.] WR 109: 10

In the section on game management (p. 59-66) activities in wildlife habitat improvement, waterfowl and deer investigations, emergency winter feeding and in game propagation are reported. Three impoundments were completed on Department owned tidal marshes; the largest for waterfowl contains 330 acres.

Maryland. TWENTY-FOURTH ANNUAL REPORT OF THE DEPARTMENT OF GAME AND INLAND FISH / 1962. Md. Conserv. 39(6): 1-40, illus. Nov.-Dec. 1962. WR 109: 11
The following areas of activity are discussed in the game management section (p. 4-14): land acquisition; waterfowl, deer, and mourning dove studies; habitat improvement; building repairs; releases of game; winter feeding; deer kill; and public hunting areas.

Middlemiss, Ernest. [10TH ANNUAL REPORT ON THE RONDEVLEI BIRD SANCTUARY AND THE CAPE OF GOOD HOPE NATURE RESERVE.] Div. Council of Good Hope. 124 p. 1961. WR 109: 11
This annual report contains the tenth for the Rondevlei Bird Sanctuary and the second for the Cape of Good Hope Nature Preserve. A list of 171 spp. of birds observed on the sanctuary since 1952 is given, 2 spp. having been added in 1961. Notes are given on the status of 10 spp. of Gastropoda, 3 spp. of Pisces, 24 spp. of Reptilia, and 16 spp. of Mammalia. Since 1952, a total of 20,846 birds have been banded at the sanctuary, with 1,192 being banded in 1961. Thirty-seven recoveries of banded birds were obtained during the year, nine of which were more than 50 miles from their banding place.

North Carolina. [BIENNIAL REPORT / WILDLIFE RESOURCES COMMISSION, 1 JULY 1960-30 JUNE 1962.] Wildl. in N. C. 27(1): 1-35, illus. Jan. 1963. WR 109: 11
Entire issue devoted to biennial report. Developments in wildlife management and research are covered on pages 20-22, 24-25. The chief problem in deer management is protection from illegal hunting and predators, including wildcats and stray dogs, and 779 arrests were made for law violations and 1,857 predators were destroyed or impounded. Early warnings of overpopulation of deer came, however, with the first winter losses of recent times. Quails, rabbits, and squirrels absorbed 75% of the hunting pressure. In 1960-61 there were 18,771 duck stamps sold and in 1961-62 there were 17,888. About 21.9% of all ducks bagged in 1960-61 were blacks, 17.9% were wood ducks, 13.9% were mallards, and 11.7% were green-winged teals. Oak mast production appeared to be unimproved as a result of fertilizer applications. Criteria for detecting overpopulations of deer were explored, including examination of ovaries to determine fawn production and measurement of adrenal glands as a reflection of stress within the population.

Oregon. 1962 ANNUAL REPORT / OREGON STATE GAME COMMISSION / GAME DIVISION. 157 p., map and sketches. 1962. WR 109: 11
The spring population of deer was about normal and that of elk was slightly increased. In the arid southeastern part of the state production of antelope was generally low, and production of deer was low. Elk production was normal. The production of upland game in 1961 was comparable to that of 1960 but below that of 1958. The number of waterfowl wintering in Oreg. declined 30% as a result of prolonged drought. Waterfowl hunting pressure declined 9% and harvest 13%. Continued low fur prices resulted in reduced trapping pressure during 1961.

WETLANDS & WILDLIFE

Gottschalk, John S. (US F&WS, Boston, Mass.) WETLANDS PRESERVATION IN MASSACHUSETTS. Mass. Wildl. 13(6): 1-5, illus. Nov.-Dec. 1962. WR 109: 11
Plans are well advanced for federal purchase of 2,700 acres of marshland for a waterfowl refuge in the Sudbury and Concord River valleys of Mass. The new refuge will make the fourth national wildlife refuge in this state.

Neely, William W. (SCS, Walterboro, S. C.) SALINE SOILS AND BRACKISH WATERS IN MANAGEMENT OF WILDLIFE, FISH, AND SHRIMP. Trans. 27th N. Am. Wildl. Conf. p. 321-335, 2 figs. 1962. WR 109: 11
Widgeon grass (Ruppia maritima) was recommended as a duck food plant on areas with salinity of 10,000 ppm or more. Ducks eat the seeds, leaves, stems, and roots of this plant. Marshhay cordgrass (Spartina patens) generally grows

where salinity is 15,000 ppm or more, and limited experience indicates that this cordgrass can be managed to provide attractive wild goose pastures. Burning is necessary for the production of tender young shoots during the fall and winter, and burning must be done on a rotation basis, as one year's growth does not provide sufficient dead material to maintain the fire.

Sowls, Lyle K. (Univ. Ariz., Tucson.) LIFE IN FRESHWATER MARSHES. Audubon Nat. Bull., Ser. 30, no. 2. Oct. 1962. WR 109: 12

This is an authoritative resume of marsh ecology and a plea for starting to save our marshland from drainage if we are to keep many of our marsh and water animals.

FARMLAND & WILDLIFE

Hornsby, Robert, Joe Bruna, Robert Eversole, and Robert Kessler. (Ky. Dept. Fish & Wildl. Resources, Frankfort.) WILDLIFE IN KENTUCKY AGRICULTURAL PROGRAMS. Trans. 27th N. Am. Wildl. Conf. p. 202-212. 1962. WR 109: 12

USDA soil conservation programs have been of small benefit to wildlife in Ky. Of 373,593 acres contracted to participate in the Soil Bank Program, only 441 were in programs specifically beneficial to wildlife. Much of the Soil Bank land was seeded with fescue grass, which has little wildlife value. Eighty-six per cent of the area checked for mowing had been mowed (chiefly during June-August).

Murray, Robert W. (Fla. Game & Fresh Water Fish Comm., Tallahassee.) FOOD PLOTS FOR WILD GAME. Fla. Wildl. 16(6): 20-23, illus. Nov. 1962. WR 109: 12

Useful information on when and what to plant to produce game on Fla. farms. Some practices which are both good land husbandry and good game management are suggested.

RANGELAND & WILDLIFE

Dasmann, Raymond F. (Univ. Calif., Berkeley.) GAME RANCHING IN AFRICAN LAND-USE PLANNING. Bull. Epizootic Diseases Africa 1962(10): 13-17. 1962. WR 109: 12

A study was made on the Henderson Ranch in Southern Rhodesia, and it was concluded that game production yields more meat and higher net profits than cattle production on the same land. Game production should be started soon, before the wild herds are further reduced. Legalizing the sale of game will pose problems in protection from over-exploitation; in the absence of a game-ranching program, large game herds will vanish from many areas of Africa.--From summ.

Hubbard, Richard L. (U. S. Forest Service, Berkeley, Calif.) THE PLACE OF BROWSE SEEDING IN GAME RANGE MANAGEMENT. Trans. 27th N. Am. Wildl. Conf. p. 394-401. 1962. WR 109: 12

Bitterbrush (Purshia tridentata) is the best browse species on areas with annual precipitation averaging more than 12 inches. Abandoned farmland and burned areas can quickly be made to produce browse by direct seeding. Seedbed preparation is necessary, and it costs about $20.00 per acre. The upper limit of stocking is 2,200 plants per acre, and a site should support at least 500 plants per acre to justify seeding.

Tester, John R., and William H. Marshall. (Univ. Minn., Minneapolis 14.) MINNESOTA PRAIRIE MANAGEMENT TECHNIQUES AND THEIR WILDLIFE IMPLICATIONS. Trans. 27th N. Am. Wildl. Conf. p. 267-287, 4 figs. 1962. WR 109: 12

A field study to determine the effects of four treatments--spring burning, fall burning, grazing, and mowing--on the flora and fauna of native tall grass prairie was carried on at the Waubun Prairie Res. Area in Mahnomen County, Minn., from 1957 to 1961. A total of 70 acres of relatively undisturbed native prairie

was selected within the 640-acre tract. On five 10-acre plots mowing, grazing or burning was carried out. Two plots were left untreated and used as controls. The effects of the four treatments on litter, upland grasses and forbs, upland woody plants, and shoreline vegetation as well as the invasion of the prairie by aspen and willow are considered in detail. Based on these data and published information on the ecology of both prairie chickens and breeding waterfowl, suggestions for management are made. A four-year rotation of spring burning, no treatment, grazing, and no treatment is recommended.--John R. Tester.

FORESTLAND--FORESTRY & ECOLOGY

Ehrenreich, John H., and Dean A. Murphy. (Central States Forest Expt. Sta., Columbia, Mo.) A METHOD OF EVALUATING HABITAT FOR FOREST WILDLIFE. Trans. 27th N. Am. Wildl. Conf. p. 376-384. 1962. WR 109: 13

A survey was made on kinds, amounts, and distributions of important wildlife foods for the 12 million acres of forest land in the Missouri Ozarks. Production data were taken by individual plant species so that information would be obtained on production by food preference classes for various spp. of forest wildlife. Information on forest type, stand size stocking class, site class, aspect, and slope was taken according to definitions of the National Forest Survey so that food production figures could be applied to known acreages of forest types. Information was also taken on past land use practices known to greatly influence understory vegetation such as livestock use, fire history, and logging or TSI operations. Total herbage and browse production varied greatly between and within the various forest types. Production was generally greatest under seedling and sapling stands, decreased as the stands grew into pole timber size, and increased slightly as stands matured into sawtimber. Browse production made up about two-thirds of the total yield in most forest types except the hardwood-cedar, cedar, and mixed hardwood types where browse made up less than one-half of the total yield. Forb production was about four times greater in the mixed hardwood forest type than in most other forest types. Grass production was far greater under cedar and cedar-hardwood types than under other forest types.--Auth. abstr.

Giles, Robert H., Jr. (Ohio Coop. Wildl. Res. Unit, Columbus 10.) TIMBER-WILDLIFE COORDINATION CONCEPTS FOR LARGE EASTERN FORESTS. Trans. 27th N. Am. Wildl. Conf. p. 402-412, 1 fig. 1962. WR 109: 13

General concepts of coordination of timber and wildlife management are discussed with their associated problems and suggestions for improvement. Emphasis of a shift from an active form of forest wildlife management to a passive one is recommended. Outlines for written management plans for small and large watersheds are given. Management priorities for game species are encouraged.--From auth. abstr.

Gould, Walter P. (Univ. R. I., Kingston.) RECENT FOREST MANAGEMENT TRENDS--POSSIBLE EFFECTS ON WILDLIFE MANAGEMENT. Trans. 27th N. Am. Wildl. Conf. p. 368-376. 1962. WR 109: 13

Land ownership patterns appear to be largely of two trends. Large industrial ownerships in the more remote areas tend toward greater consolidation, while in the more heavily settled areas the disturbing trend is toward further fragmentation. Stability of land use, in the face of ever-increasing economic and technical change, is of major importance to resource managers. The prominent and widespread utilization of technological practices such as hormone spraying, regeneration by direct seeding, and general mechanization in the forest has contributed greatly to a more flexible and intensive forest management program. Wildlife management, in terms of habitat manipulation, will be afforded both advantageous and disadvantageous situations. Evaluation of these practices and trends will, of course, have to be done on a local level in regard to animal species and habitat.--From auth. abstr.

Jemison, G. M. REGENERATION IN SUMMER-DROUGHT FORESTS OF THE WESTERN UNITED STATES. Proc. 13th Congr. Int. Union For. Res. Organ. Pt. 2(1) Sect. 23/25. 13 p., 16 refs. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 8 Oct. 1962.] WR 109: 14

In English with French and German summaries. Stresses that success requires attention to a complex of problems--competition, rodent control, quality of planting stock, handling and planting methods, etc.--which are briefly surveyed. --Courtesy/ Frank M. Johnson.

Khlonov, Yu. P., and N. F. Reimers. [THE SUPPLY OF SEEDS IN THE SOIL AND THE SIGNIFICANCE OF CERTAIN VERTEBRATE ANIMALS IN THE REPLENISHING OF THE LINDEN FOREST OF GORNA SHORYA.] Izvest. Sibirsk. Otdel. Akad. Nauk SSSR 4: 126-129. 1960. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5G375.] WR 109: 14

Translation [from Russian abstract]. The principal despoilers of linden seeds, the mouse-type rodents, can have a great influence on the soil's supply of these seeds. In one region with a natural litter of seeds, 89% were non-viable, 9.4% had been damaged by mouse-type rodents, and 0.7% were healthy. In seedings in test plots 23% were damaged by rodents; 63% were rotted, non-viable, or showed abortive development; 2% were damaged by insects; and 12% were healthy. No linden seeds were found in the crops of 22 species of birds (magpies, woodpeckers, bullfinches, continental nuthatches, pukhlyaks, opolovniks, common tree creepers (Certhia familiaris), moskovskas and others).

Wood, R. F., G. D. Holmes, and A. I. Fraser. SILVICULTURAL INVESTIGATIONS IN THE FOREST: (A) SOUTH AND CENTRAL ENGLAND AND WALES. PROTECTION AGAINST ANIMALS. Rep. For. Res. For. Comm., London 1960/61. p. 32-33. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 22 Oct. 1962.] WR 109: 14

Nylon netting (6-in. mesh) proved unsatisfactory as deer fencing, since it tended to entangle the deer and also deteriorated after about 1 year's exposure. Recent experiments with polythene netting (3-in. mesh) have proved more successful; it appears to be more resistant to exposure and, if erected so that it is quite taut, is less likely to entangle the deer.--Courtesy/ Frank M. Johnson.

CONTROL OF VEGETATION WITH HERBICIDES, ETC.

Chamberlain, E. B., Jr., and Thomas K. Goodrich. (US F&WS, Atlanta, Ga.) AERIAL AND MIST-BLOWER APPLICATION OF HERBICIDES IN SOUTHERN FORESTS AS RELATED TO WILDLIFE MANAGEMENT. Trans. 27th N. Am. Wildl. Conf. p. 384-393. 1962. WR 109: 14

A questionnaire survey of industrial foresters in 1960 revealed that approximately 150,000 acres of forest were treated in 1960 with aerial and mist blowers to control deciduous trees. Application of herbicides on pine-hardwood forests may benefit deer and rabbit; harm squirrel, turkey, and raccoon; and temporarily benefit grouse. Conditions for deer and rabbit become worse as the pine stand matures. Suggestions are given for techniques helpful in minimizing effects on wildlife of hardwood control.

Day, Maurice W. (Dunbar Forest Expt. Sta., Sault Ste. Marie, Mich.) EFFECT OF 2,4,5-T AMINE AND 2,3,6-TBA AMINE ON SEVERAL WOODY PLANT SPECIES. J. Forestry 60(7): 488. July 1962. WR 109: 14

Each tree was treated with an injection of 1 ml of undiluted product placed in a cut made with a 1-inch wood chisel 1 foot above the ground. The trees were examined about 1 year after treatment. The 2,4,5-T amine was effective on most species, except sugar maple. The 2,3,6-TBA amine was less effective.

Gordinier, E. J. (Mich. Dept. Conserv., Lansing.) WEED CONTROL IN SHRUBS PLANTED FOR WILDLIFE. Proc. 17th Ann. Meeting North Central Weed Control Conf., 12-14 Dec. 1960, Milwaukee, Wis. p. 16-17. [1961.] WR 109: 15

Because of its long residual effect, Simazine was used as a pre-emergent herbicide in an effort to obtain season-long weed control from a single treatment. Weed control was generally good, but extensive damage resulted to the shrub plantings, presumably a result of heavy rainfall within 2 weeks after treatment. This is a progress report and does not give conclusive results.

Grizzell, Roy A., Jr., and William W. Neely. (SCS, Little Rock, Ark.) BIOLOGICAL CONTROLS FOR WATERWEEDS. Trans. 27th N. Am. Wildl. Conf. p. 107-113. 1962. WR 109: 15

Field trials in Ga. and Ark. during 1957-61 demonstrated the practicality of establishing effective biological reduction of the branched filamentous algae Pithophora by using Israeli carp. A stocking of 50 carp 5" to 6" in length is recommended where other fish are already present. Cladophora was successfully reduced in widgeongrass duck ponds by introducing mullet through control gates at high tide in coastal S. C. Duckweeds were controlled in farm ponds by introducing six or more muscovy ducks per acre. Cold-water overflow systems made both summer and winter fertilization more practical in controlling weeds and increasing fish food organisms.--Roy A. Grizzell, Jr.

Hormay, August L., Fred J. Alberico, and P. B. Lord. (U. S. Forest Service, Berkeley, Calif.) EXPERIENCES WITH 2,4-D SPRAYING ON THE LASSEN NATIONAL FOREST. J. Range Mgmt. 15(6): 325-328, 3 figs. Nov. 1962. WR 109: 15

At rates of 2 pounds/acre of butyl ester 2,4-D in an emulsion of 0.5 gallon of diesel oil and 9 gallons of water, big sagebrush (Artemisia tridentata) was controlled best, silver sagebrush (A. cana) less well, and black sagebrush (A. arbuscula) least well. Different degrees of control were closely related to the growth stages of the different species.

Hovind, Ralph B. (Wis. Conserv. Dept., Woodruff.) EXPERIMENTAL APPLICATION OF HERBICIDES IN THE MANAGEMENT OF A WILDLIFE AREA. Proc. 17th Ann. Meeting North Central Weed Control Conf., 12-14 Dec. 1960, Milwaukee, Wis. p. 27-28. [1961.] WR 109: 15

Rates and results are given for several treatments.

Kozlowski, Theodore T. (Univ. Wis., Madison.) SOME PROBLEMS IN USE OF HERBICIDES IN FORESTRY. Proc. 17th Ann. Meeting North Central Weed Control Conf., 12-14 Dec. 1960, Milwaukee, Wis. p. 1-10. [1961.] WR 109: 15

This is an excellent review of the advantages and disadvantages, from the forester's viewpoint, of use of herbicides in forest management. Herbicides show promise as aids to control of species composition, brush control, plantation establishment, production of nursery stock, chemical debarking, firelane and utility line maintenance, control of tree diseases, etc. Much additional research will be required, however, for most effective use of herbicides in forestry. Included is a bibliography of 172 titles.

Pein, J. R. von. BLACKBERRY CONTROLLED WITH GOATS AND AN ELECTRIC FENCE. New Zealand J. Agr. 103(6): 535-536. 1961. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 23 July 1962.] WR 109: 15

A report is given of the successful use of goats, confined at high stocking rates by electric fences, for the control of blackberry in the northern Hawke's Bay region of New Zealand.--Courtesy/ Frank M. Johnson.

Peters, Elroy J., and Frank S. Davis. (USDA, Columbia, Mo.) MODIFICATION OF BASAL TREATMENT TO DETERMINE THE EFFECTS OF HERBICIDE PLACEMENT. Proc. 17th Ann. Meeting North Central Weed Control Conf., 12-14 Dec. 1960, Milwaukee, Wis. p. 60. [1961.] WR 109: 15

Results indicated that 2,4,5-T moves through the bark and is translocated in the trunk. The best kill of hickory trees occurred where herbicides were applied to both the trunk and bud zones.

Pierpont, R. L. (Allied Chem. Corp., New York.) BRUSH CONTROL WITH URAB. Proc. 17th Ann. Meeting North Central Weed Control Conf., 12-14 Dec. 1960, Milwaukee, Wis. p. 58. [1961.] WR 109: 16

Urab (3-phenyl-1, 1-dimethylurea trichloracetate) is an effective herbicide for control of brush in situations where regrowth of grass is desired.

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Dinesman, L. G. [THE EFFECT OF WILD MAMMALS ON THE FORMATION OF STANDS.] Izdatel'stvo Akad. Nauk SSSR (Moscow). 166 p., 34 photos, maps, diagrams and graphs. 1961. Price: Rubles 0.67. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 3 Dec. 1962.] WR 109: 16

In Russian with about 300 references.--Courtesy/ Frank M. Johnson.

Turček, F. MIERA CHROZENIA SADENÍC LESNÝCH DREVÍN V KULTÚRACH RASTLINOŽRAVÝMI MAMMALIAMI. [THE DEGREE OF DANGER TO FOREST TREES IN PLANTATIONS FROM HERBIVOROUS MAMMALS.] Lesn. Čas. 8(4): 292-303. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 8 Oct. 1962.] WR 109: 16

In Slovak with English summary.--Courtesy/ Frank M. Johnson.

MAMMALS--GENERAL

Aliev, F. F. [EXPERIMENTS ON THE ACCLIMATIZATION OF SAIGAS AND RABBITS ON THE ISLAND OF GLINYANYI.] Izvest. Akad. Nauk Azerb. SSR Ser. Biol. i Med. Nauk 1: 107-110. 1960. [From Biol. Abstr. 41(1), from Referat. Zhur., Biol., 1961, no. 3D637.] WR 109: 16

Translation [from Russian abstract]. Releases of saigas in 1955 and 1956 totalled 53. By spring 1958 they increased to 90--but 20 saigas died of starvation during summer 1958. Rabbits increased from the 35 released in summer 1956 to 3000 in Sept. 1958. It is necessary to limit numbers of saigas and rabbits on this Caspian sea island.

Cameron, Austin W. (McGill Univ., Montreal, Quebec, Canada.) MAMMALIAN DISPERSAL IN RELATION TO AN ARTIFICIAL LAND BRIDGE. Canadian Field-Naturalist 76(3): 142-146. July-Sept. 1962. WR 109: 16

The woodchuck, porcupine, raccoon, and skunk failed to colonize Cape Breton Island in six years after a road was built from the mainland to the island. All of these animals occurred reasonably near to the point where the road connects with the mainland.

Ivlev, V. S., and Kh. A. Leizerovich. [ECOLOGIC ANALYSIS OF THE DISTRIBUTION OF ANIMALS IN RELATION TO TEMPERATURE GRADIENTS.] Trudy Murmansk. Morsk. Biol. Inst. 1(5): 3-27. 1960. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D1.] WR 109: 16

Translation [from Russian abstract]. An analysis of research into land and aquatic animal behavior under conditions of thermo-gradient equipment of various types is used as a basis for a conclusion that commonly accepted procedure of calculating mean preference temperature should be replaced by a determination of modal temperature, as well as of indicators of eury-thermy and thermo-asymmetry.

Kinsey, Charles. (Minn. Div. Game & Fish, St. Paul.) A CALIPER MODIFICATION FOR MEASURING SKULLS AND BONES. J. Mammal. 43(4): 538-539, 1 fig. + 1 pl. Nov. 1962. WR 109: 16

To expedite measurements of mink skulls and femurs, a holding frame was devised for a vernier caliper. The essential features of the design involve anchoring a caliper in a fixed position, providing flat parallel surfaces perpendicular to the axis of measurement, a positive operating linkage, and a simple set of optics to facilitate reading the instrument from a sitting position. Through the use of this instrument, 1,900 measurements were made in approximately two days.

Korytin, S. A. [DATA ON THE SELECTION OF HYPNOTICS SUITABLE FOR CATCHING WILD ANIMALS.] Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Zhivotn. 18: 129-146. 1959. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1961, no. 3D645.] WR 109: 17

Translation [from Russian abstract]. 518 experiments were set up for testing 13 narcotics and 10 different combinations of them on silvery-black foxes, blue foxes, raccoon-like dogs, wolves, and red foxes. The best results (in tests on silvery-black foxes) were obtained by using the following preparations and their combinations: luminal-nembutal-barbamyl (amytal sodium)-chloral hydrate (optimal dose 110 mg), luminal-nembutal (70 mg), luminal-hexanal (hexobarbital) (135 mg), barbamyl (65 mg), thiopental sodium (125 mg), medinal (barbital sodium) (160 mg), barbital (veronal 160 mg). The raccoon-like dog had the greatest sensitivity to narcotics, the foxes the least.

MAMMALS--FAUNAS AND MANUALS

Ansell, W. F. H. MAMMALS OF NORTHERN RHODESIA. A REVISED CHECK LIST WITH KEYS, NOTES ON DISTRIBUTION, RANGE MAPS, AND SUMMARIES OF BREEDING AND ECOLOGICAL DATA. Dept. Game & Fisheries, Govt. Printer (Lusaka, Northern Rhodesia). xxi + 155 p., 7 pls. + 24 p. of supplement. Aug. 1960. [From J. Mammal. 43 (4), 1962.] WR 109: 17

Bromlei, G. F. [MAMMALIAN LAND FAUNA OF THE PRIMORSKII KRAI AND THE PRIAMUR REGION.] Biologiya Resursy Dal'nego Vostoka. Akad. Nauk SSR (Moscow). p. 44-56. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 3D599.] WR 109: 17

Translation [from Russian abstract]. A preliminary list of terrestrial mammals from Primorskii krai and Priamur region includes 80 spp. (insectivora and chiroptera, 14 spp. each; 21 spp. carnivora; 8 spp. artiodactyla; 23 spp. rodents). Mammals are divided into 7 groups according to extent of their adaptation to various terrains. Effect of climatic factors on fauna is considered and also successions of vegetation which affect results of propagation. Of spp. which over-produced, some re-established their number (sable, Nemorhaedus caudatus), and others stand at the borderline of complete extinction (tiger, Cervus nippon). Martes flavigala, Siberian ferret (Mustela sibirica), squirrels, Lepus timidus, and local Cervus elaphus xanthopygus under-produced; in Priamur region, elk (Alces alces) and others. Systematic felling and burning destroys food base of badger, sable, tiger, squirrel, and ensures an increase in number of less valuable spp. Problems are posed for further studies of terrestrial fauna of Far East.

Cameron, Austin W. (McGill Univ., Montreal, Quebec.) MAMMALIAN ZOOGEOGRAPHY OF THE MAGDALEN ISLANDS ARCHIPELAGO, QUEBEC. J. Mammal. 43(4): 505-514, 1 fig. Nov. 1962. WR 109: 17

Abstract: The Magdalen Islands are oceanic islands in a zoogeographical sense which have been isolated from the mainland at least since the retreat of the last Wisconsin ice sheet. There are no native amphibians, reptiles or true fresh-water fish and, besides bats, only 4 species of native terrestrial mammals.

de Carvalho, Cory T. SÔBRE ALGUNS MAMÍFEROS DO SUDESTE DO PARÁ. [ON SOME MAMMALS FROM THE SOUTHEAST OF PARÁ (BRAZIL).] Arq. Zool. (São Paulo) 11: 121-132, maps. 1962. [From Biol. Abstr. 40(4), 1962.] WR 109: 17

[In Portuguese.] Descriptive notes and discussion of taxonomy and relationships are included. The indigenous (Kayapó) and Portuguese names are also given. The list includes 1 sp. of marsupial, 7 of Chiroptera, 4 of Primates, 10 of Rodentia, 5 of Carnivora, and 4 of Artiodactyla.--A. K. Winner.

Matthes, H. W. VERBREITUNG DER SÄUGETIERE IN DER VORZEIT. [DISTRIBUTION OF MAMMALS IN THE PAST.] Handbuch der Zoologie (Berlin) [8(11), Beitrag 1(28)]: 1-198. Dec. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 17

[In German.]

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MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

Nikitina, N. A., and I. L. Kulik. [CHANGES IN THE NUMBER AND DISTRIBUTION OF SMALL MAMMALS IN THE NORTHERN PART OF THE VOLGA-AKHTUBINSK FLOOD PLAIN AS A RESULT OF THE CONSTRUCTION OF A HYDROELECTRIC POWER STATION.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 67(1): 15-22. 1962. [From Biol. Abstr. 40(4), 1962.] WR 109: 18

[In Russian] with English summary. Change in water regime of the lower part of Volga basin caused by construction of a hydroelectric power station has resulted in abrupt decrease in the number of Arvicola amphibius, murine rodents, and ixodic ticks.--From auth. summ. transl.

MAMMALS--PARASITES AND DISEASES

Gäbler, H., and H.-G. Schumann. ERFOLGSKONTROLLE EINER FUCHS- UND DACHS-BEGASUNG IM RAHMEN DER TOLLWUTBEKÄMPFUNG. [EFFICIENCY CONTROL IN A FOX AND BADGER GASSING FOR RABIES SUPPRESSION.] Arch. Forstw. 10(11/12): 1310-1323. 1961. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 22 Oct. 1962.] WR 109: 18

In German with Russian and English summaries. Discusses symptoms and epidemics of rabies, forest animals affected (12), and the ineffective treatment of dens and lairs with a compound producing PH_4 in the presence of moisture. Too late applications of inadequate dosage are probable causes of failure.--Courtesy/ Frank M. Johnson.

Gorman, George W., Sturgis McKeever, and Roger D. Grimes. (Public Health Service, Savannah, Ga.) LEPTOSPIROSIS IN WILD MAMMALS FROM SOUTHWESTERN GEORGIA. Am. J. Tropical Med. & Hyg. 11(4): 518-524. July 1962. WR 109: 18

Of 3,002 animals checked for leptospirosis, 291 (9.69%) were positive. Of 25 spp. examined, isolates were obtained from 10: house mouse, cotton rat, cottontail, opossum, raccoon, striped skunk, spotted skunk, gray fox, wildcat, and feral pig. None of the animals displayed physical symptoms of illness or exhibited gross pathology. Only two of 55 urine specimens from animals that were found positive by routine cultural procedures were reported positive by the microscopic procedure.

Savchenko, P. E. [ON THE EPIZOOTIOLOGY OF OPISTHORCOSIS IN THE CHERNIGOVKA OBLAST.] Med. Parazitol. i Parazitar. Bolenzni 30(6): 746-747. 1961. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1962, no. 10K46.] WR 109: 18

Translation [from Russian abstract]. Original with English summary. A total of 337 wolves, cats, raccoons, dogs, foxes, and badgers were studied. On the Desna (river) the chief sources of Opisthorchis felineus were wolves (27%) and cats (22%), along the river Seim--raccoons (15%), along the Dnepr--cats (27%) and raccoons (11%), and along the rivers Snov, Oster, and Belousa--cats (11-19%). O. felineus was localized primarily in the liver and the gallbladder, more rarely in the pancreas.

SHREWS, MOLES, BATS

Abelyentsev, V. I. [ECONOMIC IMPORTANCE OF BATS, THEIR PROTECTION, AND ATTRACTION IN FOREST PROPAGATION. In: DATA FOR THE PRESERVATION OF NATURE IN THE UKRAINE.] Akad. Nauk Ukrainsk. RSR (Kiev) 1: 117-126. 1959. [From Biol. Abstr. 41(1), 1963, from Referat. Zhur., Biol., 1961, no. 3D654.] WR 109: 18

Translation [from Russian abstract]. Original in Ukrainian with Russian summary. Of the 39 spp. of bats in the Ukrainian fauna, only 22 spp. are occasionally encountered in the steppe zone. They are few in number here because of the general lack of suitable cover, but cover is absent in a series of localities where the bats are present. To attract bats into the steppe region of the Ukrainian RSR, the author recommends hanging up artificial shelters and bringing "great" and "pointed-eared" noctuids, bats, and other spp. into the regions of large reservoirs.

Bauer, Kurt. DIE FLEDERMÄUSE DES LINZER GEBIETES UND OBERÖSTERREICHS. [THE BATS OF THE LINZER DISTRICT AND UPPER AUSTRIA.] Naturk. Jahrb. Stadt Linz. 1958: 307-323. 1958. [From J. Mammal. 43(4), 1962.] WR 109: 19
[In German.]

Clough, Garrett C. (Dalhousie Univ., Halifax, Nova Scotia.) BIOLOGY OF THE ARCTIC SHREW, SOREX ARCTICUS. Am. Midland Nat. 69(1): 69-81, 4 figs. Jan. 1963. WR 109: 19

No interspecies relationships were found between Arctic shrews and 6 other spp. of small mammals inhabiting the same area, and the population fluctuation of shrews appeared to be independent of other small mammals. Young shrews appeared first in July and disappeared in July of following year. Males came into breeding condition in Feb. and ♀♀ were pregnant by mid-May. Young did not breed in their first year. Average embryo count of four ♀♀ was 6. Rate of capture in live traps was slightly lower in early morning than at other times.

Davis, Richard B., Clyde F. Herreid II, and Henry L. Short. (Texas A. & M. Coll., College Station.) MEXICAN FREE-TAILED BATS IN TEXAS. Ecological Monographs 32(4): 311-346, 11 figs. Autumn 1962. WR 109: 19

During the breeding season, many bats (Tadarida brasiliensis mexicana) occupy the caves of the Balcones Escarpment and the adjacent Edwards Plateau of Texas. More than 70% of young are born within a 10-day period. Newborn young are left on ceiling of cave during feeding flights. With the many young on the ceiling, the mother cannot find her own but suckles the first two aggressive young encountered on her return to the nursery. The young are able to make feeding flights about 1 month after birth. Adults start leaving area as soon as young are able to fly. Young remain at cave of their birth until onset of cold weather in Oct. and Nov. These bats roost in buildings throughout Texas, and some thus spend the winter in southern Texas. The gestation period is slightly more than 90 days. One young is born per adult per year, and most ♀♀ have young the summer following birth. Sperm production is waning when adult ♂♂ arrive in spring, their sex glands attain a resting stage size by early May. The youngest age class of ♂♂ shows no sexual activity. There are many more ♀♀ than ♂♂ during the breeding season in Texas, and many ♂♂ presumably fail to migrate northward. Peak production of sperm apparently occurs during winter before arrival of the animals in Texas. No indication of rabies was found. Average life span may be more than 11 years.

Dwyer, P. D. (Univ. New England, Armidale, Australia.) STUDIES ON THE TWO NEW ZEALAND BATS. IV. A REVIEW OF FIELD OBSERVATIONS ON NEW ZEALAND BATS. Zool. Publ. Victoria Univ. (Wellington) 28: 11-28, illus., maps. 1962. [From Biol. Abstr. 40(5), 1962.] WR 109: 19

The present area of distribution of New Zealand bats is considerably less than it was over a century ago. The decrease is correlated with the restriction of forest during the last century and the failure of either species to survive in open country or to urbanize. Field observations in relation to behavior and ecology are reviewed, and probable species differences in hibernation, foraging times, and diet are indicated. Fur mites are reported as parasites of both species.--From auth. abstr.

Felten, Heinz. BEMERKUNGEN ZU FLEDERMÄUSEN DER GATTUNGEN RHINOPOMA UND TAPHOZOUS (MAMMALIA, CHIROPTERA). [NOTES ON THE BATS OF THE GENERA RHINOPOMA AND TAPHOZOUS (MAMMALIA, CHIROPTERA).] Senckenbergiana Biol. 43(2): 171-176. 22 Mar. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 19
[In German.]

Griffin, Donald R. (Biol. Lab., Harvard Univ., Cambridge, Mass.) ECHO-ORTUNG DER FLEDERMÄUSE, INSBESONDERE BEIM FANGEN FLIEGENDER INSEKTEN. [ECHO ORIENTATION OF BATS, ESPECIALLY DURING CATCHING OF FLYING INSECTS.] Naturwiss. Rundschau 15(5): 169-173, illus. 1962. [From Biol. Abstr. 41(3), 1963.] WR 109: 19
[In German.] The orientation by echo of the suborder Microchiroptera has been demonstrated by numerous acoustic experiments with Eptesicus fuscus and Myotis lucifugus.--G. Follmann.

Heerdt, P. F. van, and J. W. Sluiter. NEW DATA ON LENGEVITY IN BATS. Natuurhist. Maandblad 50(3-4): 36. 28 Apr. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 20

Hoffmeister, Donald F., and Woodrow W. Goodpaster. (Univ. Ill., Urbana.) LIFE HISTORY OF THE DESERT SHREW NOTIOSOREX CRAWFORDI. Southwestern Nat. 7 (3-4): 236-252, 4 figs. Dec. 1962. WR 109: 20

In early or late summer 3-5 hairless young are born. Adult size is attained in 50-90 days. Two caged animals lived 40 weeks without water. They were fed only freshly-killed sparrows, but wild-living animals probably eat insects.

Makarov, V. V., and K. G. D'Yakova. [TRAPPING DESMANS ON THE KHOPERSKII GAME RESERVATION DURING 1956 AND 1957.] Trudy Khopersk. Gosudarst. Zapovednika 3: 5-14. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D569.] WR 109: 20

Translation [from Russian abstract]. Trapping procedures and experiments in the maintenance of desmans at a captive maintenance and transport station are described.

Miller, Donald H. (Lyndon State College, Lyndon Center, Vt.) DAYTIME ATTACK ON A BAT BY BLACKBIRDS. J. Mammal. 43(4): 546. Nov. 1962. WR 109: 20

Red-winged blackbirds (Agelaius phoeniceus) attacked a bat (Myotis lucifugus) observed flying in the mid-afternoon. The bat was knocked into the water.

Sluiter, J. W. ABRASION OF TEETH IN CONNECTION WITH AGE IN THE BAT MYOTIS MYOTIS. Proc. Kon. Nederl. Akad. Wetensch. Ser. C. 64(3): 424-434, illus. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 20

Webster, Frederic A., and Donald R. Griffin. (Harvard Univ., Cambridge, Mass.) THE ROLE OF THE FLIGHT MEMBRANES IN INSECT CAPTURE BY BATS. Animal Behaviour 10(3&4): 332-340, 8 figs. July-Oct. 1962. WR 109: 20

Electronic flash photographs were used to study methods employed by bats for catching flying insects. A small and slow-flying insect may sometimes be seized directly with the mouth. Usually, however, insects are caught in a pouch formed by forward extension of the legs and tail. The wings are sometimes used to aid in the capture of insects.--From summ.

RABBITS AND PIKAS

Bull, P. C. (Dept. Sci. & Industrial Res., Wellington, N. Z.) POPULATION DYNAMICS OF THE WILD RABBIT ORYCTOLAGUS CUNICULUS. Sci. Review 20(2): 23-26. 1962. WR 109: 20

Factors influencing rates of reproduction and mortality include: intra-specific competition, weather, parasites and disease, predation, food, cover and living conditions. The data summarized in this paper conform with the view that animal populations tend to increase until they encounter some limiting factor in the environment; the nature of this factor, or combination of factors, and the level at which it reaches maximum effectiveness varies from place to place and from time to time.--From concl.

de Vos, Antoon. (Ontario Agr. Coll., Guelph, Canada.) CHANGES IN THE DISTRIBUTION OF THE SNOWSHOE HARE IN SOUTHERN ONTARIO. Canadian Field-Nat. 76 (4): 183-189, 2 figs. Oct.-Dec. 1962. WR 109: 20

The range of the snowshoe hare has receded northward since 1930, but the recession may have recently halted with some repopulation of earlier abandoned areas. Reasons for the reduction of range include drainage, logging, over-grazing, and overshooting.--From summ.

Hanson, W. C. (General Electric Co., Richland, Wash.) SEASONAL PATTERNS OF STABLE AND RADIOACTIVE IODINE IN THYROIDS OF NATIVE JACK RABBITS. Trans. 27th N. Am. Wildl. Conf. p. 225-232, 4 figs. 1962. WR 109: 21

Stable and radioactive iodine concentrations were determined monthly in the thyroid glands of native jack rabbits (Lepus californicus wallawalla Merriam) on the Hanford Reservation of southeastern Wash. during 1956-60. An average monthly iodine value was obtained from 4-13 animals. Maximum concentrations of radioiodine occurred during winter months with minimum values measured in early spring and again in late summer. The amounts of stable iodine varied more irregularly than the radioiodine amounts. Radioiodine burdens to thyroids were continuously supplied through atmospheric releases from nuclear processing stacks and burdens increased tenfold during nuclear test periods.

Hewson, Raymond. (Keith, Banffshire, Scotland.) FOOD AND FEEDING HABITS OF THE MOUNTAIN HARE LEPUS TIMIDUS SCOTICUS, HILZHEIMER. Proc. Zool. Soc. London 139(3): 415-426, 1 pl. Oct. 1962. WR 109: 21

Ling (Calluna vulgaris) formed 90% of the winter and about half of the summer diet. Cotton grass (Eriphorum spp.) made up about 10% of the winter and 20% of the summer food.--From auth. abstr.

Merkusheva, I. V. [THE HELMINTH FAUNA OF LEPUS EUROPAEUS AND L. TIMIDUS IN BYELORUSSIAN S.S.R.] Trudy Nauk.-Issledovatelskogo Vet. Inst. (Minsk) 1960(1): 211-216. 1960. [From Helminthol. Abstr. 31(3), 1962.] WR 109: 21

Skeels, Margaret A. (Univ. Mich., Ann Arbor.) NESTING BEHAVIOR OF SYLVILAGUS AUDUBONII NEOMEXICANUS. J. Mammal. 43(4): 542-544, 1 fig. Nov. 1962. WR 109: 21

Detailed notes on the construction and composition of desert cottontail nests.

Stevens, Vernon C. (Ohio State Univ., Columbus 10.) REGIONAL VARIATIONS IN PRODUCTIVITY AND REPRODUCTIVE PHYSIOLOGY OF THE COTTONTAIL RABBIT IN OHIO. Trans. 27th N. Am. Wildl. Conf. p. 243-254, 1 fig. 1962. WR 109: 21

A study was initiated to ascertain whether cottontail rabbits in the four major physiographic regions of Ohio reproduced at different rates and to locate the stages of reproduction that were different. Approximately 1,600 cottontails were studied. The number of ovarian corpora lutea, the number of implantation sites, and the number of living embryos found in pregnant females were significantly different. The unglaciated sandstone and shale region of southeastern Ohio had the lowest reproductive rate. The loss of whole litters did not vary appreciably among the regions. Variations in ovulation rate appeared to be responsible for productivity differences. Significant regional variation existed in pituitary gonadotrophin content. Thyroid gland activity varied significantly among the regions, but adrenal gland function did not exhibit such differences. Regional differences in pituitary gonadotrophin production was believed to be responsible for the differences in reproductive rates among the regions.--From auth. summ.

RODENTS--MISCELLANEOUS

Eisenberg, John F. (Univ. Calif., Berkeley.) THE INTRASPECIFIC SOCIAL BEHAVIOR OF SOME CRICETINE RODENTS OF THE GENUS PEROMYSCUS. Am. Midland Nat. 69(1): 240-246. Jan. 1963. WR 109: 21

A description of the behavior patterns of Peromyscus californicus, P. eremicus, P. crinitus, and P. maniculatus confined together in a 3-compartment cage.

Grodzinzki, W. METABOLISM RATE AND BIOENERGETICS OF SMALL RODENTS FROM THE DECIDUOUS FOREST. Bull. Acad. Polonaise Sci., Cl. II, 9(12): 493-499. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 21

Hamilton, William J. III. (Golden Gate Park, San Francisco 18, Calif.) REPRODUCTIVE ADAPTATIONS OF THE RED TREE MOUSE. J. Mammal. 43(4): 486-504, 6 figs. Nov. 1962. WR 109: 22

Detailed treatment of the estrous cycle, ovulation, mating behavior, gestation period and delayed implantation, postpartum estrous, weight changes, lactation, ingestion of Phenacomys longicaudus. "It seems probable that small litters, unusually long gestation, delayed implantation during lactation, and exceptionally slow development of the nursing young are all features of the reproductive process adapted to the energy-conversion difficulties inherent in a fir needle diet."

Hechter-Schulz, K. (P. O. Box 5021, Bohsburg, North Transvaal, Africa.) RODENT CONTROL IN SABIE FORESTS. S. African J. Sci. 58(6): 161-174. 1962. [From Biol. Abstr. 40(4), 1962.] WR 109: 22

Rodent damage to the man-made forest of Sabie amounted to about £60,000 annually for several years until 1951. In that year experimental work at Sabie indicated a method of control which has been successfully used since then. This method depends on poisoning, carried out in rodent optimum habitat areas, thus creating a "biological vacuum" into which the expanded rodent population is drawn back to be killed in turn.--Author.

Karaseva, E. V. [THE EFFECT OF PLOWING UP VIRGIN LAND ON THE WAY OF LIFE AND TERRITORIAL DISTRIBUTION OF MURINE RODENTS IN NORTHERN KAZAKHSTAN.] Zool. Zhur. 40(5): 768-773. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 21242.] WR 109: 22

Translation [from Russian abstract]. Original with English summary. Plowing up virgin land leads to the direct death of rodents feeding on the vegetative parts and the roots of plants (Lagurus spp., Ellobius spp., and dolichocephalic field mice). However, favorable conditions are created on sowed areas for those which eat grain. Thus, Cricetus eversmanni develops more intensively and becomes sexually mature earlier on fields than on virgin land. They multiply several times as rapidly on fields as on virgin land.

Khabaeva, G. M. [ON RODENT FAUNA OF THE MUISK VALLEY.] Kraevedcheskii Sb. Buryatsk. Fil. Geogr. Obshch. SSSR 4: 129-132. 1959. [From Biol. Abstr. 40 (5), 1962, from Referat. Zhur., Biol., 1961, no. 3D598.] WR 109: 22

Translation [from Russian abstract]. Out of 23 spp. of mammals noted in Muisk Valley (Buryatiya) in the summer of 1958, 11 spp. were rodents. A list of them is presented with data about localities they inhabited and their numbers. There is an absence of steppe and forest-steppe spp. in the fauna as regards northern Asiatic and Yakut spp.

Lidicker, W. Z., Jr., and P. K. Anderson. (Univ. Calif., Berkeley.) COLONIZATION OF AN ISLAND BY MICROTUS CALIFORNICUS, ANALYSED ON THE BASIS OF RUNWAY TRANSECTS. J. Animal Ecol. 31(3): 503-517, 4 figs. + 1 pl. Oct. 1962. WR 109: 22

Population increased when green vegetation was available and decreased during dry periods. The entire island (47 acres) was invaded by voles during growing season following arrival of animals, but habitat was not fully exploited until the second year. Voles moved into new habitats before those already occupied were fully utilized. There was more seasonal variation in poorer habitats. First arrivals in an uninhabited area build runways at random, but micro-habitats later become apparent. There was considerable variation in the life span of individual runways--ranging from a few weeks to almost two years.

Morrison, Peter, and Fred A. Ryser. (Univ. Wis., Madison.) HYPOTHERMIC BEHAVIOR IN THE HISPID POCKET MOUSE. J. Mammal. 43(4): 529-533, 3 figs. Nov. 1962. WR 109: 22

Abstract: Observations on body temperature and metabolism in the cold have shown a clear hibernation response in Perognathus hispidus. The thermal conductance (0.16 cc O_2/g-hr-°C) was at an average value for a mammal of this size. The body temperature of the quiet animal was 36.2°C and the basal metabolic level was 1.28 cc O_2/g-hr.

Myllmäki, Arvo, Jorma Aho, Esko A. Lind, and Johan Tast. (Univ. Helsinki, Finland.) BEHAVIOR AND DAILY ACTIVITY OF THE NORWEGIAN LEMMING, LEMMUS LEMMUS (L.), DURING AUTUMN MIGRATION. Ann. Zool. Soc. Zool. Bot. Fennicae Vanamo 24 (2): 1-31, illus., map. 1962. [From Biol. Abstr. 41(1), 1963.] WR 109: 23

[In English] with Finnish summary. Long detailed summary in Biological Abstracts.

Nikiforov, N. I. [THE RESULTS OF A 2-YEAR CAMPAIGN AGAINST RODENTS IN THE TAMBOV OBLAST.] Veterinariya 3: 20-22. 1962. [From Biol. Abstr. 41(1), 1963.] WR 109: 23

[In Russian.] The organization of the control measures is described in detail. Totals of 1460.6 kg of zoocoumarin, 1025 kg of red squill, 2720 kg of bacterial cultures and smaller quantities of other rodenticides were used during this 2-year period. Most of the farm buildings were completely freed of rodents and approximately 252,000 dead mice and 319,000 dead rats were collected.

Osborn, Dale J. (Anatolia Coll., Thessaloniki, Greece.) RODENTS OF THE SUBFAMILY MICROTINAE FROM TURKEY. J. Mammal. 43(4): 515-529, 7 figs. Nov. 1962. WR 109: 23

Distributional records of species of Microtinae were recorded from European and Asian Turkey. Discussions of species included general distribution, habitat, variation and zoogeography. Darker coloration in Pitymys subterraneus and Clethrionomys glareolus in the eastern Black Sea region was thought to be correlated with the mild and humid climatic conditions of that area. These species and Arvicola terrestris were considered to have immigrated to Anatolia via the Balkan peninsula. That the Bosporus was a recent geological phenomenon was indicated by the similarities between the discontinuous forms which it has produced.--From auth. abstr.

Smirnov, P. K. [ON THE PROBLEM OF PHYSIOLOGICAL CHARACTERISTICS OF THE FIELD MOUSE (AGRICOLA AGRARIUS) IN RELATION TO ITS ECOLOGY.] Trudy Petergofsk. Biol. Inst. Leningrad Gosudarst. Univ. 18: 202-214. 1960. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 3D618.] WR 109: 23

Translation [from Russian abstract]. Eighty-three animals from Leningrad and Belgorod oblasts were studied. The critical point in the metabolism of all animals was observed at 28-32°C. Isolated individuals died at 30°C. Intensity of thermoregulation in field mice from Leningrad oblast was 5.69% for each degree of change in environmental temperature (beyond 100% there was a loss of O_2 at the temperature of the metabolic critical point). Intensity of thermoregulation of those from Belgorod oblast was 9.93%. "Comfort zone" in summer was observed to be in the interval 15-20°C, in Nov. at 0-10°C. Skin temperature was most variable on extremities and tail when environmental temperature changed from 0 to 35°C. Temperature gradients from visceral cavity to surface of body and along body and extremities are of great importance in maintaining a constant body temperature. According to type of their summer activity, field mice occupy an intermediate position between mice and the field mouse, Microtus, with regard to euryphagia in this sp. Northern populations of field mice differ from southern populations by greater length of their daily activity. Characteristics considered are liveliness of reactions directed to keep an energy balance in the body, based on adaptation.

Tatarinov, K. A. [DIGGING ACTIVITY OF THE "SMALL WATER FIELD MOUSE" ON SUBALPINE MEADOWS IN THE CARPATHIANS.] Zool. Zhur. 40(5): 786-788. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 2I245.] WR 109: 23

Translation [from Russian abstract]. Original with English summary. In places the "water field mouse" ejects dozens of cubic meters of soil, which is taken away by mountain streams. Because this creature facilitates erosion of slopes and destroys crops, it is a serious pest. It should be controlled and its hides utilized.

Thaeler, Charles S., Jr. VARIATION IN SOME SALT-MARSH POPULATIONS OF MICROTUS CALIFORNICUS. Univ. Calif. Publ. Zool. 60(2): 67-94. 28 Nov. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 24

Whitaker, John Ognen, Jr. A STUDY OF THE MEADOW JUMPING MOUSE, ZAPUS HUDSONIUS (ZIMMERMAN) IN THE ITHACA EAST QUADRANGLE, NEW YORK. Ph.D. thesis, Cornell Univ. 150 p. 1962. [From abstr. in Dissertation Abstr. 23(5), 1962.] WR 109: 24

Mice were most often found in open brushy fields, and presence of water affected the mice only indirectly through its influence on vegetation. Of 956 mice examined, 26 harbored trematodes and 5 cestodes. Of 864 mice, 36 were parasitized by ticks. At Ithaca, Zapus hibernates from mid-October to late April. About two-thirds of mice failed to survive hibernation. Weight of animals in spring averaged more than fall weights although animals lost about 6 grams of weight during hibernation, presumably because lighter animals failed to survive. Breeding season extended from early May to early October with maximum births in June and August. Many mice have 2 litters per year; some may have 3. Mean number of embryos in 78 pregnant ?? was 5.5. Average weight of 14 newborn young was 0.8 grams.

Yatsenko, E. N. [THE BIOLOGY OF PROMETHEOMYS SCHAPOSCHNIKOVI SAT.] Uchenye Zap. Severo-Osetinsk. Gosudarst. Pedagog. Inst. K. L. Khetagurova 23(1): 185-193. 1958. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D702.] WR 109: 24

Translation [from Russian abstract]. Describes the gnawing activity, the effect of P. schaposchnikovi on the vegetation, and dispersal of the young. Also given are methods of controlling it on mountain pastures.

RATTUS AND MUS

Kubantsev, B. S. [SEX RATIOS IN THE PROGENY OF MAMMALS AND ITS DEPENDENCE ON LIVING CONDITIONS.] Uchenya Zap. Stalingrad. Gosudarst. Pedagog. Inst. 13: 69-78. 1961. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1962, no. 12A248.] WR 109: 24

Translation [from Russian abstract]. In experiments with mice, a decrease of protein content in food resulted in an increase in number of males. Effect of environmental temperature may have an influence on sex ratios in progeny of mammals.

Tigner, James R., and Jerome F. Besser. (Denver Wildl. Res. Center, Denver, Colo.) A QUANTITATIVE METHOD FOR EVALUATING CHEMICALS AS RODENT REPELLENTS ON PACKAGING MATERIALS. Agr. & Food Chem. 10(6): 484-486. Nov.-Dec. 1962. WR 109: 24

A concentration-repellent technique was used to determine when 50% of test rodents were repelled (R_{50}). β-Nitrostyrene, tributyltin chloride, cyclohexiimide and α-cyano-β-phenylacrylonitrile were the most effective repellents for commensal rodents among house mice (Mus musculus) and Norway rats (Rattus norvegicus) tested.

SCIURIDS

Anthony, Mark. (S. Ill. Univ., Carbondale.) ACTIVITY AND BEHAVIOR OF THE WOODCHUCK IN SOUTHERN ILLINOIS. Occas. Pap. C. C. Adams Center Ecol. Studies no. 6. p. 1-25, 3 figs. 5 Dec. 1962. WR 109: 24

Woodchucks are active throughout the year in southern Ill. Activity was greatest around midday in winter, and during morning and evening in summer. Juveniles used abandoned dens after abandonment of natal dens. Corn may be an important food of the woodchuck in southern Ill. Feeding areas in brush-timber were larger than those in open fields, and feeding areas of adults were larger than those of young. Interspecific strife involving red foxes and raccoons with woodchucks was observed. Large mammals and birds and loud noises disturbed woodchucks. These often caused cessation of activity the remainder of the day following disturbance.--From summ.

SCIURIDS--Continued

Armitage, Kenneth B. (Univ. Kans., Lawrence.) SOCIAL BEHAVIOUR OF A COLONY OF THE YELLOW-BELLIED MARMOT (MARMOTA FLAVIVENTRIS). Animal Behaviour 10(3&4): 319-331, 6 figs. July-Oct. 1962. WR 109: 25

The distribution of animals indicated a preference for burrows at the center of the colony. Some home ranges overlapped, but animals tended to avoid use at the same time of areas of overlap. Some home ranges were larger when population was more dense or when agonistic behavior was more frequent. Activity was from about sunrise to about 30 minutes after sunset. Communication between marmots involved sight, smell, touch, and particularly hearing. Hibernation began in the second week of August. Agonistic behavior may be one of factors limiting the number of marmots in a colony.

Balph, David F., and Allen W. Stokes. (Utah State Univ., Logan.) ON THE ETHOLOGY OF A POPULATION OF UINTA GROUND SQUIRRELS. Am. Midland Nat. 69(1): 106-126, 10 figs. Jan. 1963. WR 109: 25

The movements, postures, and sounds associated with social behavior of Citellus armatus were described. Some comparisons were made with other mammals, and an attempt was made to ascribe possible cause and function of some activities.--From auth. abstr.

Egorov, O. V. [FORECASTING THE NUMBER OF SQUIRRELS IN YAKUTIYA.] Trudy Inst. Biol. Yakutsk. Fil. Sibirsk. Otdel Akad. Nauk SSSR 6: 3-46. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 3D577.] WR 109: 25

Translation [from Russian abstract]. Knowing the composition of the food base [presence of seeds from Dahurian larch (Larix gmelini), cedar, and mushrooms; for southern Yakutiya seeds of spruce, fir, and pine] in autumn and size of generation in 1st quarter of year, it is possible to make a forecast of number of squirrels in the following generation (in 4th quarter of year). For the last 20 years, increase in provisions in 4th quarter of year in Yakutiya was 110-360% higher (on average, 220% higher) than in 1st quarter of same year.

Longley, William H. (Forest Lake, Minn.) MINNESOTA GRAY AND FOX SQUIRRELS. Am. Midland Nat. 69(1): 82-98. Jan. 1963. WR 109: 25

On a 40-acre study area in Minn., there was one gray squirrel per acre during Sept. and 0.65 per acre during the winter. During 3 years, 22-24 young were produced. Mating occurred during Jan.-July, with half of the conceptions occurring from mid-Jan. to early Mar. Nineteen litters averaged 2.68 young. Survival of young until fall was 23% in 1959 and 41% in 1960. In two years, 40% and 48% of all gray squirrels survived from one fall to next, and 11-12% survived until the third fall. Gray squirrels moved 1/2 mile through open country between woodlots. Adult ♂♂ weighed 480-720 grams and adult ♀♀--476-725 grams. Den boxes were used. Instead of being beneficial, they were often detrimental. Only one pair of fox squirrels was present; thus little information was obtained on this species.--From abstr.

BEAVER

Dezhkin, V. V. [IMPROVEMENTS IN METHODS OF CAPTIVE MAINTENANCE AND TRANSPORTATION OF THE RIVER BEAVER.] Trudy Voronezhskogo Gos. Zapovednika 9: 109-143. 1960. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1961, no. 5D657.] WR 109: 25

Translation [from Russian abstract]. Data on the mortality of beavers during periods of captive maintenance are given by the year, data on the mortality in transport are given for each group. Total mortality of the beavers during captive maintenance, in transport and after liberation approximated 40%; mostly younger animals. Of the 85 mature beavers lost in captive maintenance on the reservation over a 10-year period, 56.5% died of gastro-intestinal disturbances, 3.6% of pulmonary diseases, 7.1% from traumas and complications, 4.6% from heat strokes, etc. Observations and experiments on beaver in captive

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maintenance and in transport to points of resettlement were carried out from 1954 to 1956. Author discusses maintenance, feeding, length of captivity, principles of matching colonization groups, inventory supply, organization and consumption of labor (for the inventorying and use of various transportation means, etc.) during transport to points of resettlement.

Dezhkin, V. V. [THE PRESENT DISTRIBUTION OF BEAVER IN EURASIA.] Zool. Zhur. 40(1): 106-116. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I264.] WR 109: 26

Translation [from Russian abstract]. Original with English summary. A review. For the USSR, the data are based on the status in 1958. Bibliography: 106 references.

D'Yakov, Yu. V. [POPULATION DYNAMICS OF THE KHOPERSK POPULATION OF RIVER BEAVERS.] Trudy Khopersk. Gosudarst. Zapovednika 3: 27-63. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D640.] WR 109: 26

Translation [from Russian]. The Khopersk population of beavers is descended from 19 animals resettled from the Voronezh game reservation and set free during 1937 and 1939 in the Khopersk bottom lands. Prior to the last hunt in 1956, the population numbered 442 beavers. A total of 162 beavers were taken during 1950 and 1952. Calculations from data on age group relations in the population and other methods were used in an attempt to establish a true chart of population dynamics of the beaver population. Beaver census procedures used at the game reservation prior to 1952 produced distorted results. A listing of beaver colonies is included, with data on their population from 1937 to 1957.

Hanson, Willis D., and Robert S. Campbell. (Mo. Conserv. Comm., 903 Elm St., Columbia.) THE EFFECTS OF POOL SIZE AND BEAVER ACTIVITY ON DISTRIBUTION AND ABUNDANCE OF WARM-WATER FISHES IN A NORTH MISSOURI STREAM. Am. Midland Nat. 69 (1): 136-149, 5 figs. Jan. 1963. WR 109: 26

The presence of beaver pools in the headwaters of a stream affected fish by providing prolonged flow of water and deep pools in periods of low flowage. Improvement could be seen in increased variety and abundance of fish.

Ling, H. KOBRASTE ESINEMISEST EESTIS. [THE DISTRIBUTION OF BEAVERS IN ESTONIA.] Eesti Loodus 5: 281-286, illus., maps. 1961. [From Biol. Abstr. 40(5), 1962.] WR 109: 26

[In Estonian] with English and Russian summaries. Article deals with acclimatization, numbers and distribution of beavers introduced into Estonia in 1957. Beavers have appeared in all rivers of Jägala river basin. Beavers have found suitable living conditions and their numbers are growing.

Yazan, Yu. P. [BEAVERS IN THE UPPER PECHORA BASIN.] Trudy Inst. Biol. Ural. Fil. Akad. Nauk SSSR 18: 153-168. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D638.] WR 109: 26

Translation [from Russian abstract]. The last Pechora beaver was killed around 1817. From 1938 to 1940, 19 Voronezh beavers were resettled into the Pechoro-Ilychskii game reservation. The population grew by 1956 to 170 beavers, and by 1957 it totalled 200 beavers inhabiting 14 tributaries and 4 sectors of the Pechora river. Data are cited on the results of acclimatization of the beavers, as well as on the resettlement of beavers in other areas of the Komi Autonomous SSR during 1950, 1951 and 1955. The beavers appear regularly on the surface during the winter at temperatures above -10 C to replenish the food supply. The elk is their prime competitor for food.

Yazan, Yu. P. [CLASSIFICATION OF BEAVER LODGES IN THE UPPER PECHORA BASIN.] Trudy Pechoro-Ilychsk. Gosudarst. Zapovednika 7: 241-267. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D639.] WR 109: 26

Translation [from Russian abstract]. The classification is based on productivity of beaver habitats. Observations of 400 to 500 km of coastline and 20 to 45 beaver colonies were made each year over a period of 5 years. Investigated reservoirs are divisible into 5 types: Mountain streams, semi-mountainous

rivers, forest rivers, springs and river valley old-age lakes. Mountain streams are nearly free of beaver colonies. Habitats of 13 types were identified in remaining reservoirs: Bush osieries with admixtures of birch, willow-groves intermixed with bush willows and birch, birch groves, meadows, groves of aspen trees, aspen groves with willows, etc. Habitation conditions and level of beaver colonization are given for each type of habitat.

Zharov, V. K., and V. V. Vinichenko. (Irkhutsk Agr. Inst., USSR.) [THE BEAVERS OF THE BOL'SHOI KEMCHUG RIVER.] Zool. Zhur. 41(6): 957-959, map. 1962. [From Biol. Abstr. 41(1), 1963.] WR 109: 27

[In Russian] with English summary. Eighty beavers from the Voronezh state reserve were released in the river Bolshoi Kemchug, Krasnoyarsk Territory in 1948 and 1950. At the end of 1960 some 600 beavers were found in the reserve of Bolshoi Kemchug. Organization for the rational utilization of increased beaver population is necessary.

MUSKRAT AND NUTRIA

Butler, L. (Univ. Toronto, Ontario, Canada.) PERIODICITIES IN THE ANNUAL MUSKRAT POPULATION FIGURES FOR THE PROVINCE OF SASKATCHEWAN. Canadian J. Zool. 40(7): 1277-1286, 4 figs. Nov. 1962. WR 109: 27

Yearly production of muskrat pelts for the period 1915-60 exhibits a 6-year periodicity in the southern and central portion of Saskatchewan and a 10-year periodicity only in northern Saskatchewan. Some of the population changes are correlated with precipitation data, and in the prairie section highest catches occurred after 2 wet years. In the other sections the muskrat population is not correlated with precipitation. In the aspen grove section there is a slight correlation between snowfall and the muskrat catch the next spring.--From summ.

Dubost, G. L'INVASION DE LA LORRAINE PAR LE RAT MUSQUÉ (ONDATRA ZIBETHICA L.) [THE INVASION OF LORRAINE BY THE MUSKRAT (ONDATRA ZIBETHICA L.).] Mammalia 26(1): 56-63. Mar. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 27

[In French.]

Nernyshev, V. I. [ACCLIMATIZATION OF THE NUTRIA, MYOPOTAMUS (MYOCASTOR) COYPUS, IN TADZHIKISTAN.] Trudy Akad. Nauk Tadzh. SSR 106. 65 p. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 3D638.] WR 109: 27

Translation [from Russian abstract]. Original with Tadzhik summary.

Ocetkiewicz, Jadwiga, Zbigniew Rychlicki, and Jadwiga Kawinska. (Inst. Zootechniki, Krakow, Poland.) PROBA OKRESLENIA WARTOSCI POZYSKIWANYCH W OBOJU LETNIM SKOR MLODYCH NUTRII. [AN ATTEMPT TO EVALUATE THE FUR OF YOUNG NUTRIA KILLED IN SUMMER.] Rocz. Nauk Rolniczych Ser. B. Zootechniczna 78(4): 705-719, illus. 1962. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 27

In Polish.

Reimov, R. (Karakal Br., Acad. Sci. Uzbek SSR, Nukus.) [SPECIFIC FEATURES OF MUSKRAT REPRODUCTION IN FRESH- AND SALTWATER BODIES.] Zool. Zhur. 41(8): 1238-1240. 1962. [From Biol. Abstr. 41(3), 1963.] WR 109: 27

[In Russian] with English summary. There is no significant difference between number of embryos in muskrat inhabiting freshwater and brackish water localities in delta of Amu-Darya river.

Strautman, E. I. [THE ECOLOGY OF THE MUSKRAT IN NORTHERN KAZAKHSTAN.] Trudy Inst. Zool. Akad. Nauk Kazakhskoi SSR 13: 3-17. 1960. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D707.] WR 109: 27

Translation [from Russian abstract]. This work was done from 1955 to 1957. Results of autopsies on 1043 animals (320 females sex organs were studied) are given with complete helminthological examinations done on 38 animals. Migration

and heat take place in the muskrat immediately after ice on open waters thaws; young appear 25 to 30 days after heat in all females. Times of appearance of 2nd and subsequent litters is drawn out in connection with drought. One female produces 10 to 18 young per year. Young constitute 80-85% of the population during hunting season. Ratio of males to females among young is 1.3 : 1, among adults, 1 : 1. Muskrat constitutes up to 95% of the diet of Circus aeruginosus while it is feeding its nestlings; at the beginning of its hunting C. aeruginosus exterminates 20-25% of muskrat young. Muskrats make up 17% of diet of foxes. Five spp. of helminths and infection with echinococcus were noted. An increase in muskrat population is restrained by foci of tularemia. Supply of muskrats in Kazakhstan is large but only slightly used. Organization of specialized farms is desirable.

FUR ANIMALS, GENERAL

O'Neil, Ted. (Wildl. & Fisheries Bldg., 400 Royal St., New Orleans, La.) LOUISIANA'S FUR INDUSTRY TODAY. La. Conserv. 15(1&2): 3-6, illus. Jan.-Feb. 1963. WR 109: 28

The annual catch of muskrats in La. dropped from 8,337,411 in the 1945-46 trapping season to 632,558 in 1961-62. The catch of nutria increased while that of muskrats declined. An estimated 10,000,000 pounds of nutria meat was quick-frozen in the 1961-62 trapping season and sold as food for minks and pet animals. Nutria can be obtained in commercial quantities from 20,000,000 acres of state lands; most of the muskrats are concentrated on 1,000,000 acres. "Recent activities in the fur industry plainly show that the state has permanently added to its resources [with the introduction and increase of the nutria] and the general and widespread benefits will continue for decades."

Shaposhnikov, L. V. [ACCLIMATIZATION OF FUR ANIMALS IN RELATION TO THE PROTECTION AND ENRICHMENT OF THE FAUNA OF THE USSR.] Okhrana Prirody i Zapovednikovoe Delo v SSSR 4: 37-51. 1960. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D651.] WR 109: 28

Translation [from Russian abstract]. Approximately 200,000 valuable fur animals of 25 spp. were resettled in the USSR since 1924. The acclimatization of the sable, the beaver, the nutria, the American mink, the common hare (in Siberia), Citellus fulvus (on the Barsa-Kelines island) and the raccoon is considered successful. The results were considered questionable for the squirrel and the raccoon-dog, and unsuccessful for the rabbit, arctic fox, black fox and skunk. Acclimatization results are reviewed for each species in terms of economic effects, changes in biology and morphology in new habitat conditions, etc. Successful acclimatization is possible when definite zoogeographic, biologic and biocenotic prerequisites are present.

BEARS

Dathe, Heinrich. BEOBACHTUNGEN ZUR FORTPFLANZUNGSBIOLOGIE DES BRAUNBÄREN, URSUS ARCTOS L. [OBSERVATIONS ON THE REPRODUCTIVE BIOLOGY OF THE BROWN BEAR, URSUS ARCTOS L.] Zool. Garten (Leipzig) 25(5): 235-250. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 28

[In German.]

Dittrich, L., and I. v. Einsiedel. BEMERKUNGEN ZUR FORTPFLANZUNG UND JUGENDENTWICKLUNG DES BRAUNBÄREN (URSUS ARCTOS L.) IM LEIPZIGER ZOO. [NOTES ON THE REPRODUCTION AND DEVELOPMENT OF YOUNG IN THE BROWN BEAR (URSUS ARCTOS L.) AT THE LEIPZIG ZOO.] Zool. Garten (Leipzig) 25(5): 250-269, illus. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 28

[In German.]

BEARS--Continued

Troyer, Willard A., and Richard J. Hensel. (Kodiak Natl. Wildl. Refuge, Kodiak, Alaska.) CANNIBALISM IN BROWN BEAR. Animal Behaviour 10(3&4): 231. July-Oct. 1962. WR 109: 29

Four cases of cannibalism by males were reported. Three of the victims were cubs, but one was a female weighing 375 pounds. Apparently cannibalism is most prevalent during the breeding season when males are seeking sows.

RACCOON, RINGTAIL, COATI

Redford, Polly. (3975 Little Ave., Miami 33, Fla.) RACCOON IN THE U.S.S.R. J. Mammal. 43(4): 541-542. Nov. 1962. WR 109: 29

Acclimatization experiments were started in the USSR with raccoons [Procyon lotor] in the mid-1930's. Twenty-one animals were released in 1941, and these multiplied so that 900 animals were trapped 8 years later for stocking elsewhere. The 900 animals multiplied so rapidly that by 1955 there were enough raccoons to support regular commercial trapping.

MUSTELIDS

Aspisov, D. I. [THE POPULATION DYNAMICS OF THE FOREST MARTEN IN THE VOLGA KAMA AREA AND SOME INDEXES FOR FORECASTING CHANGES IN ITS NUMBERS.] Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Zhivotn. Syr'ya i Pushniny 18: 29-45. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 29

[In Russian.] Density of marten population depends upon composition and age of forest planting. The average density obtained for south Tatar in 1953 was 2.6/1000 ha. Annual production of hides was used as an index of population levels. Age techniques employed included skull and teeth characters and the os penis in ♂♂. Populations with 50% or more younger ♂♂ were considered in good condition; those with 30% or less were rated as "poor".--From long abstr.

Tavrovskii, V. A. [DISTRIBUTION AND NUMBERS OF MARTENS IN YAKUTIYA IN THE PAST.] Trudy Inst. Biol. Yakutsk. Fil. Sibirsk. Otdel. Akad. Nauk SSSR 6: 47-75. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D631.] WR 109: 29

Translation [from Russian abstract]. According to data from fur-tribute and tax levies, total number of martens in Yakutiya was 200,000-250,000, but as early as 1640's there were indications of a decrease in population of martens.

Wijngaarden, A. van, and M. F. Mörzer Bruijns. DE HERMELIJNEN, MUSTELA ERMINEA L., VAN TERSCHELLING. [THE ERMINE, MUSTELA ERMINEA L., OF TERSCHELLING.] Lutra (Leiden) 3(3): 35-42. Dec. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 29

[In Dutch.]

Y[a]zan, Yu. P. [THE MORPHOLOGY AND ECOLOGY OF MARTENS, SABLES AND KIDAS OF THE PECHORA TAIGA.] Zool. Zhur. 41(8): 1241-1246. 1962. [From Biol. Abstr. 41(3), 1963.] WR 109: 29

[In Russian] with English summary. Pechora martens are generally smallest among martens; smaller than Pechora sables, and kidas. It has been found that the food of animals differs, depending on age and sex. Martens are most adaptive to conditions of Pechora taiga. Sex ratio among martens averages for a population: 46% females and 54% males. Prevalence of males has been observed among populations of Pechora sable and kidas.

MUSTELIDS--Continued

Zaleker, V. L., and N. B. Poluzadov. [DIET AND FERTILITY OF THE TRANSURAL MARTEN.] Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Zhivotn. 18: 18-28. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D632.] WR 109: 30

Translation [from Russian abstract]. An analysis of contents of 778 stomachs established that the basic diet of the marten consists of murine rodents (occurring 69.2% of the cases: red and gray field mice, forest lemmings) and birds (18.1%, chiefly Tetraonidae). In years when food supply deteriorates, fertility goes down to 70% with 2-4 (average, 3.2) corpora lutea of pregnancy/female.

DOGS, WOLVES, FOXES

Chirkova, A. F., L. M. Kostyaev, and Yu. V. Rybalkin. [FEATURES OF THE HUNTING CHARACTERISTICS AND BIOLOGY OF THE ARCTIC FOX AS OBSERVED ON THE SOUTHWEST SHORE OF THE KARSK SEA IN THE WINTER OF 1956-57.] Trudy Vsesoyuz. Nauch Issledovatelskog. Inst. Zhivotnykh Syr'ya i Pushniny 18: 88-113. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D695.] WR 109: 30

Translation [from Russian abstract]. Information is given on the number of hunters, the bag of Arctic foxes in different years, and the income to the collective farm from hunting. Food habits, reproduction, sex ratios, parasites, morphology and fur quality of the Arctic fox are discussed.

Kadirov, N. T. [THE HELMINTH FAUNA OF THE SMALL INTESTINE OF DOGS AND WILD CARNIVORES IN THE AKMOLINSK REGION.] Byull. Nauk-Tekh. Informatsii Vsesoyuznogo Inst. Gelmintol. im. K. I. Skryabina no. 5. p. 30-36. 1959. [From Helminthol. Abstr. 31(4), 1962.] WR 109: 30

In Russian. In the Akmolinsk region 14 helminth spp. were found in 30 dogs, 20 fox, 3 Vulpes corsac and 13 wolves.

McCarley, Howard. (Austin Coll., Sherman, Texas.) THE TAXONOMIC STATUS OF WILD CANIS (CANIDAE) IN THE SOUTH CENTRAL UNITED STATES. Southwestern Nat. 7 (3-4): 227-235, 2 figs. Dec. 1962. WR 109: 30

All current samples of Canis from Ark., Okla., and Texas were identified as C. latrans frustror. The extirpation of C. niger from these three states may be the result of failure to adapt to changing conditions and hybridization with C. latrans, resulting in a form known as C. niger rufus. C. n. rufus may be a hybrid of C. latrans and C. niger. C. niger now occurs only in a few places in eastern and southern La.

Morozzi, A. OSSERVAZIONI SULLA TRICHINOSI DELLE VOLPI IN PROVINCIA DI PERUGIA. [OBSERVATIONS OF TRICHINOSIS OF FOXES IN THE PROVINCE OF PERUGIA.] Parassitologia (Rome) 2(1/2): 247-251. 1960. [From Helminthol. Abstr. 31(3), 1962.] WR 109: 30

[In Italian.]

Strogov, A. K. [THE ETIOLOGY OF THE "MADNESS" OF ARCTIC AND OTHER FOXES AND OF DOGS LIVING IN THE TUNDRA ZONE OF THE YAKUTSK AUTONOMOUS SOVIET SOCIALIST REPUBLIC.] Nauch. Soobshch. Yakutsk. Fil. Sibirsk. Otdel. Akad. Nauk SSSR 5: 101-108. 1961. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1962, no. 8I300.] WR 109: 30

Translation [from Russian abstract].

CATS

Pagasiński, Andrzej. (Agr. Coll., Warszawa, Poland.) A CONTRIBUTION TO THE KNOWLEDGE OF HELMINTH FAUNA OF THE LYNX AND WILDCAT IN POLAND. Acta Parasitol. Polonica 9(1): 1-6. 1961. [From Biol. Abstr. 39(5), 1962.] WR 109: 30

[In English] with Polish summary.

Marshall, William H. A NOTE ON THE FOOD HABITS OF FERAL CATS ON LITTLE BARRIER ISLAND, NEW ZEALAND. New Zealand J. Sci. 4(4): 822-824. Dec. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 31

BIG GAME, GENERAL

Bendt, Robert H. (Natl. Park Service, Washington, D. C.) THE JACKSON HOLE ELK HERD IN YELLOWSTONE AND GRAND TETON NATIONAL PARKS. Trans. 27th N. Am. Wildl. Conf. p. 191-201, 1 fig. 1962. WR 109: 31

Annual numbers on the refuge during the fall, winter, and spring have been averaging 7,000-8,000 elk, with the largest recorded population being 11,500 during a period of deep snow in 1955-56. Approximately 1,500 acres of land is used to produce hay for winter feeding, and 2,500-3,000 tons of hay are annually harvested. In order to restrict the size of the elk population to the summer carrying capacity of the range, 11,600 permits have been issued since the control program has been handled by public hunting. The total number of elk killed since 1951 was 1,610. Some information is given on seasonal movements of the animals.

Blancou, L. MENSURATIONS ET POIDS DE QUELQUES ONGULÉS DU TCHAD ET DE LA RÉPUBLIQUE CENTRE-AFRICAINE. [MEASUREMENTS AND WEIGHTS OF SOME UNGULATES OF CHAD AND THE CENTRAL AFRICAN REPUBLIC.] Mammalia 26(1): 84-106. Mar. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 31

[In French.]

Dasmann, Raymond F., and Archie S. Mossman. (Humboldt State Coll., Arcata, Calif.) REPRODUCTION IN SOME UNGULATES IN SOUTHERN RHODESIA. J. Mammal. 43 (4): 533-537. Nov. 1962. WR 109: 31

Abstract: Information is presented on breeding seasons and reproduction of ungulates in the Henderson Ranch area in Southern Rhodesia. Some species, the impala, warthog, kudu, waterbuck, wildebeest, giraffe and perhaps eland, appear to be seasonal in the production of young. However, these species differ in the time when young are produced, and together show no correlation with the plant phenology of the area. Species which breed through the year, but may have a seasonal peak, are the zebra, duiker and steenbuck. With the exception of the warthog, all of the species observed produced one young per year. The writers believe that duiker and steenbuck produce their first young at one year of age; impala, warthog, kudu and probably waterbuck and wildebeest at two years; eland, and probably zebra and giraffe at three years.

Griffith, Chuck. (S. Dak. Dept. Game, Fish & Parks, Pierre.) WHERE DO THE DEER AND ANTELOPE PLAY? S. Dak. Conserv. 29(4): 22-25, illus. Winter 1962. WR 109: 31

A report on some of the problems encountered in developing a miniature radio transmitter for use in studying activities of deer. Cost of the entire transmitter unit was about $30. If produced commercially design and construction costs would have amounted to about $250 per unit.

Grobov, O. F. [THE SUSCEPTIBILITY OF THE ELK TO ANAPLASMOSIS OF CATTLE.] Veterinariya 9: 50. 1961. [From Biol. Abstr. 39(5), 1962, from Referat. Zhur., Biol., 1962, no. 5I155.] WR 109: 31

Translation [from Russian abstract]. Young elks 15-25 days old were given subcutaneous injections of 60 ml citrated blood from cows diseased with anaplasmosis. Within 47 days, Anaplasma was found in blood smears from the elks. A reduction in the Hb content was noted. At the time of the greatest parasitic reaction, a decrease in albumins and an increase in beta-globulins was found, indicating a disturbance of metabolism. During this period, slight depression was observed among the elks, but growth and shedding proceeded normally. There were no parasites in the blood after 3 months.

Klein, David R. (Alaska Coop. Wildl. Res. Unit, College.) RUMEN CONTENTS ANALYSIS AS AN INDEX TO RANGE QUALITY. Trans. 27th N. Am. Wildl. Conf. p. 150-164, 2 figs. 1962. WR 109: 32

The chemical determination of nitrogen content of gross rumen samples offers a reliable technique for the evaluation of summer forage quality. Analyses of nitrogen content of the washed vegetative rumen components and fiber content of both the gross and washed samples were also reliable indicators of forage quality. These can be used independently or in support of other analyses. Simpler techniques suitable for rumen analysis were as follows: (1) centrifuge fractionation of microorganisms, (2) light transmittancy determinations of rumen liquor, and (3) microscopic counts of protozoa.

Kuster, A. ÜBER DIE GEMSBESTÄNDE IN DEN EIDGENÖSSISCHEN JAGDBANNGEBIETEN. [STOCK OF CHAMOIS IN THE (SWISS) FEDERAL GAME PRESERVES.] Schweiz. Zeit. Forstw. 113(1): 20-24. 1962. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 32

[In German.] Results of censuses of chamois in 22 game preserves, made in 1930, 1940, 1950, and 1960, are presented. In 1960 there were approximately 10,000 head on 1450 sq km of preserves.

Nichols, Lyman, Jr. (Div. Fish & Game, Honokaa, Hawaii.) BIG GAME MANAGEMENT IN HAWAII. Trans. 27th N. Am. Wildl. Conf. p. 413-423. 1962. WR 109: 32

Big game management on the 22 public game management areas (totalling 475,747 acres) in Hawaii is under the jurisdiction of the Hawaii Division of Fish and Game in the state. Management of most big game on private lands does not fall under Fish and Game control. Game management areas range in size from 600 acres to over 180,000 acres and include a variety of habitats from the tropical to the sub-arctic. Big game found within them includes axis deer, wild boar, feral sheep, and feral goats. A brief summary of the present status and management of each species is given. In addition to the management of these established species, the big game program includes the limited introduction of other game species where they are believed desirable. The mouflon sheep, prong-horned antelope, and black-tailed deer are the three species brought in to date, and their introduction now appears successful.--Auth. abstr.

Ogren, Herman A. (N. Mex. Dept. Game & Fish, Santa Fe.) BARBARY SHEEP IN NEW MEXICO. N. Mex. Dept. Game & Fish, Bull. no. 11. ii + 32 p., illus. 1962. WR 109: 32

The Barbary sheep (Ammotragus lervia) is a native of northern Africa. Fifty-seven sheep were stocked in 1950 in northeastern N. Mex., and by 1959 there were more than a thousand. The total harvest for 4 seasons since Barbary sheep became legal game in 1955 amounted to 98 sheep. Hunter success was 39%.

Stelfox, John G. (Dept. Lands & Forests, Edmonton, Alberta, Canada.) LIVER, LUNGS & LARVAE / PARASITES AND DISEASES IN MOOSE, DEER AND ELK IN ALBERTA. Land-Forest-Wildlife 5(4): 5-12, illus. Nov.-Dec. 1962. WR 109: 32

Abnormalities were observed by hunters in the flesh, liver and lungs of animals shot, and tissue specimens were submitted to the Provincial Veterinary Laboratory. Hydatid cysts (Echinococcus granulosus), tapeworm (Cysticercus krabbei), bladderworm (Cysticercus tenuicollis) and liver flukes (Fascioloides magna) were found. Visible abnormalities were 14 times as common in moose as in deer and 6 times as common in moose as in elk. Two species of ticks, Dermacentor albipictus and D. andersoni, were also found. One emaciated elk had an average of 249 winter ticks per square foot of hide.

Stewart, G. G., and S. A. Neustein. THE PROTECTION OF REPLANTED GROUPS WITHIN CONIFEROUS FOREST AGAINST ROE DEER. Rep. For. Res. For. Comm. London 1960/61. p. 170-174. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 15 Oct. 1962.] WR 109: 32

Experiments in protection by covering individual trees with branches, or surrounding groups of 300 plants by a 10-ft.-wide barrier of branches or of old wire netting laid on the ground, were none of them consistently effective, and all had incidental disadvantages.--Courtesy/ Frank M. Johnson.

Talbot, L. M., and M. H. Talbot. PRELIMINARY OBSERVATIONS ON THE POPULATION DYNAMICS OF THE WILDEBEEST IN NAROK DISTRICT, KENYA. E. Afr. Agr. For. J. 27 (2): 108-116. 1961. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 16 Apr. 1962.] WR 109: 33

Covers reproductive rate, mortality, migration, grazing and water supplies in the range (the Serengeti National Park of Tanganyika and the Narok District of Kenya) and the effect of burning, rainfall and grass on the location of calving.--Courtesy/ Frank M. Johnson.

Turček, F. J. [BARK SCALING BY ROE-DEER (CAPREOLUS CAPREOLUS).] Lesn. Čas. 8(5): 342-353, 4 photos. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 10 Dec. 1962.] WR 109: 33

In Slovak with German summary.--Courtesy/ Frank M. Johnson.

Tyler, C. EFFECT OF PROLONGED EMOTIONAL DISTURBANCE ON THE VASOPRESSOR AND OXYTOCIC ACTIVITIES CONTAINED IN THE POSTERIOR PITUITARY GLANDS OF FALLOW DEER. Arch. Pharmacodyn. 131: 301-308. 1961. [From Vet. Bull. 32(11), 1962.] WR 109: 33

In English. In the pituitary glands of ten deer which had been harried for varying periods of time before being shot, the ratio of vasopressor to oxytocic activity progressively increased from about unity to above 2, as the time of chasing increased. This change was probably due to a fall in oxytocic activity. --From auth. summ.

Wodarz, S. ÜBER DAS SCHÄLEN DES ROTWILDES AN DER KIEFER. [BARK-SCALING OF SCOTS PINE BY RED DEER.] Holz-Zbl. 88(86): 1411-1412, 3 figs. 1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 1 Oct. 1962.] WR 109: 33

In German.--Courtesy/ Frank M. Johnson.

DEER (Odocoileus)

Blanchard, Harold, and John Gill. (Gill: Dept. Inland Fisheries & Game, Orono, Me.) GAME KILLS -- 1951 THROUGH 1960. Me. Dept. Inland Fisheries & Game, Game Div. Leafl. Ser. 2(4). 11 p., 1 fig. Sept. 1962. WR 109: 33

This report is based on a questionnaire to randomly chosen hunting license holders. In the earlier years of the study 1 licensee in 6 and in the later years 1 in 10 failed to go hunting. Deer is the most popular game animal, being sought by 80-90% of the hunters. Other animals rank as follows: partridge, rabbit, pheasant, waterfowl, bear, gray squirrel, fox, woodcock, and raccoon.

Cowan, I. McT. (Univ. B. C., Vancouver.) HYBRIDIZATION BETWEEN THE BLACK-TAIL DEER AND THE WHITE-TAIL DEER. J. Mammal. 43(4): 539-541. Nov. 1962. WR 109: 33

An assumed hybrid (Odocoileus hemionus columbianus X O. virginianus ochrourus) was reported.

Dasmann, W. P., and R. F. Dasmann. (U. S. Forest Service, San Francisco, Calif.) ABUNDANCE AND SCARCITY IN CALIFORNIA DEER. Calif. Fish & Game 49 (1): 4-15, 5 figs. Jan. 1963. WR 109: 33

Fluctuation in numbers of deer bagged in the years since 1927 reflects population fluctuations. Fluctuation is a feature of natural populations rather than managed populations, and waste is associated with this fluctuation. If the deer population were managed by removal of enough animals of either sex to hold them at optimum levels, some of the waste could be averted.

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Dietz, Donald R., Robert H. Udall, and Lee E. Yeager. (U. S. Forest Serv., Fort Collins, Colo.) CHEMICAL COMPOSITION AND DIGESTIBILITY BY MULE DEER OF SELECTED FORAGE SPECIES, CACHE LA POUDRE RANGE, COLORADO. Colo. Game & Fish Dept., Tech. Bull. no. 14. 89 p., 27 figs., 16 photos. Dec. 1962. WR 109: 34

Aspen and willow were the best sources of protein, fat, nitrogen-free extract, ash, calcium and phosphorus. Protein, ash and phosphorus percentages were highest in the late spring; fat, fiber, nitrogen-free extract and calcium percentages were highest in the fall. On the basis of amount consumed feeds were ranked in the following order: alfalfa, bitterbrush, mountain mahogany, and big sagebrush. Penned deer lost weight on an alfalfa-sagebrush diet. They gained weight on alfalfa, alfalfa-mahogany, and bitterbrush. They did not change weight on mahogany and alfalfa-bitterbrush diets. Four yearling deer were able to digest more of the fiber content in sage than that of either alfalfa or deciduous shrubs. Big sagebrush contained more total digestible nutrients than alfalfa, mahogany and bitterbrush. Palatibility and weight gain seemed to be enhanced by the feeding of mixed rations.

Ferris, D. H. (Univ. Ill., Urbana.) DEER DISEASE RESEARCH IN ILLINOIS. Ill. Wildl. 18(1): 5-7, illus. Dec. 1962. WR 109: 34

More than 15,000 blood tests were run on about 5,000 deer since deer hunting was started in Ill. in 1957. Only 8 animals had positive tests for brucellosis and 32 for Q fever. In the five years of the study, 11-27% of the deer reacted positively to leptospires. The deer population of Ill. increased from 2,500 to about 50,000 in 15 years.

Heidmann, L. J. (U. S. Forest Serv., Flagstaff, Ariz.) DEER REPELLENTS ARE EFFECTIVE ON PONDEROSA PINE IN THE SOUTHWEST. J. Forestry 61(1): 53-54, 2 figs. Jan. 1963. WR 109: 34

Browsing by Rocky Mountain mule deer kills many young ponderosa pines and keeps others in a hedge-like stage indefinitely. As trees browsed for many years usually have extensive root systems, they can grow out of reach of deer rapidly if protected from browsing. Two repellents, TMTD and ZAC, applied to the trees at the beginning of the growing season reduced browsing from 56% to 9% (TMTD) and 8% (ZAC). Protection did not last into a second growing season. --Auth. abstr.

Hurd, E. S. A DINNERBELL FOR THE WHITETAIL. Am. Forests 68(8): 24-26, 46-48, illus. Aug. 1962. WR 109: 34

The chain saw is an important piece of equipment in deer management, and the animals sometimes learn to come for food at the sound of the chain saw motor. Wis. hunters reaped a harvest in the past 10 years of 4-5 times the number of deer harvested 40 years ago. This increase of harvestable deer is the result of a program which permits a timely and planned harvest.

Kerns, Chester. (State Office Bldg., Box 231, Annapolis, Md.) THE 1962 DEER SEASON. Md. Conserv. 40(1): 14-15, illus. Jan.-Feb. 1963. WR 109: 34

The season had 6 separate divisions: regular firearms, 3 bow and arrow seasons, and 2 antlerless deer seasons. The total kill was 6,076 deer, the highest annual kill recorded for Maryland. The total taken with bow and arrow was 211. Counties with antlerless hunting yielded higher kills and healthier animals.

McDowell, Robert D. (Univ. Conn., Storrs.) THE PHYSICAL CONDITION OF CONNECTICUT'S DEER HERD. Conn. Wildl. Conserv. Bull. 8(6): 1, 6-8. Nov.-Dec. 1962. WR 109: 34

With only small samples available, using (1) body weight, (2) hind foot length, (3) antler development, and (4) productivity rates as expressions of physical vigor, we have, in every instance, strong evidence that the Conn. deer herd compares favorably with those to be found on the best ranges in the northeastern region of the U. S. With proper management, if desirable in view of other demands upon our land resources, such a herd could increase in numbers until the annual legal kill might be much higher than it is at the present time.--From summ. & concl.

Robinson, William L. (Univ. Toronto, Toronto, Ontario.) SOCIAL DOMINANCE AND PHYSICAL CONDITION AMONG PENNED WHITE-TAILED DEER FAWNS. J. Mammal. 43 (4): 462-469, 3 figs. Nov. 1962. WR 109: 35

Abstract: Winter observations of social behavior in 3 groups of 5 penned white-tailed deer fawns on sub-maintenance rations showed: A dominant position in the hierarchy seemed to be favorable from the standpoint of maintaining physical condition. Some deer, however, in socially low-ranking positions, but in good condition in autumn, survived the winter with few ill effects.

MAMMALS--MARINE

Brown, S. G. A NOTE ON MIGRATION IN FIN WHALES. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 51(1): 13-16. Jan. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 35

Brown, S. G. THE MOVEMENTS OF FIN AND BLUE WHALES WITHIN THE ANTARCTIC ZONE. Discovery Repts. 33: 1-54, illus. Mar. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 35

Chapskii, K. K. [SOME ECOLOGICAL CAUSES OF THE SEASONAL DYNAMICS OF THE DISTRIBUTION OF THE WHITE SEA POPULATION OF HARP SEAL (PAGOPHOCA GROENLANDICA).] Trudy Soveshch. Ikhtiol. Komissiya Akad. Nauk SSSR 12: 150-163. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I271.] WR 109: 35

Translation [from Russian abstract]. A description is given of the autumn-spring migrations of the harp seal, together with an analysis of the seasonal conditions of its habitat which influence the biologic rhythm of the species. The long process of localization of the sites of reproduction of the harp seal in the White Sea has been promoted by the favorable biotopic (drift ice) and biotic conditions (absence of enemies, mass availability of schooling fish.)

Dorofeev, S. V. [SOVIET STUDIES ON FUR SEALS IN THE NORTHERN PART OF THE PACIFIC OCEAN.] Trudy Soveshch. Ikhtiol. Komissiya Akad. Nauk SSSR 12: 164-169. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I272 .] WR 109: 35

Translation [from Russian abstract]. On Robben Island an increase was found in the number of fur seals born (as compared with the previous year) of 8.4% in 1958 and of 8.7% in 1959. The principal causes of mortality among fur seal pups here are trauma (70.4% of the cases), starvation (10.6%), and various diseases and other causes (19%). By marking it was ascertained that the number of mature bulls with harems on individual breeding grounds fluctuated, and that most of these bulls remained in the harems no longer than 1 month. The most convenient time for counting harem bulls is the period from the end of June to the end of July. In the 1958-59 tagging program 29,097 pups were tagged on Robben Island and on the Komandor Islands.

Jonsgård, Åge. ON THE SPECIES OF DOLPHINS FOUND ON THE COAST OF NORTHERN NORWAY AND IN ADJACENT WATERS. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 51(1): 1-13, illus. Jan. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 35

Khuzin, R. Sh. [METHODS OF AGE DETERMINATION AND DATA ON THE REPRODUCTION OF THE BELUGA.] Nauch.-Tekh. Byull. Polyarnogo Nauch.-Issledovatel. i Proekt. Inst. Morsk. i Rybnogo Khoz. i Okeanogr. 1(15): 58-60. 1961. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1962, no. 9I185.] WR 109: 35

Translation [from Russian abstract]. Using as age criteria the structure of teeth and ovaries, the length of time required for the females to reach sexual maturity was established in 127 belugas: it was 2 to 6 years. The females bear young annually or, more rarely, every 1.5 to 2 years.

Khuzin, R. Sh. [PROSPECTS FOR THE DEVELOPMENT OF THE WHITE WHALE INDUSTRY IN THE EUROPEAN NORTH.] Trudy Soveshch. Ikhtiol. Komissiya Akad. Nauk SSSR 12: 133-137. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I279.] WR 109: 36

Translation [from Russian abstract]. The author recommends an increase in the catch to 2-3 thousand head, by utilizing drive hunting in convenient coastal sections and stake nets in the open sea, and also the development of active hunting in the open sea with the sweep method. In addition to increasing ship-based hunting, the inshore industry must be restored in the places where it existed previously.

King, Judith E. SOME OF THE AQUATIC MODIFICATIONS OF SEALS. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 51(3): 104-120. Mar. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 36

Klumov, S. K. [PLANKTON AND THE FOOD OF WHALEBONE WHALES (MYSTACOCETI).] Trudy Inst. Okeanol. Akad. Nauk SSSR 51: 142-156. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I266.] WR 109: 36

Translation [from Russian abstract]. Original with English summary. The biomass of plankton can be considered as a food source for whales if it exceeds 1500-2000 mg/m^3. On the basis of observations and energy calculations, the weight of food consumed per day by average humpback and fin whales was found to be 1-1.5 metric tons. It is conjectured that in searching for food, whales utilize echo location and, to a lesser extent, touch and vision.

Kotov, V. L. [PRESENT STATUS AND OBJECTIVES OF MANAGEMENT OF MARINE MAMMALS.] Trudy Soveshch. Ikhtiol. Komissiya Akad. Nauk SSSR 12: 14-17. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I277.] WR 109: 36

Translation [from Russian abstract]. A brief survey is presented. In the region of the Barents and White Seas, a reduction in the seal take and an increase in the white whale catch are noted. A prohibition has been issued against rifle hunting afloat of the harp seal, bearded seal, and hair seal. In the seas of the Far East, the whaling industry is regulated by the rules of the International Convention. For the preservation of fur seals in the northern part of the Pacific Ocean, a convention was concluded between the USSR, the USA, Canada and Japan; and in 1958 the Soviet of Ministers of the USSR ratified the rules for the seal industry. Rules were worked out which improve the protection of pinnipeds and the preservation of their breeding grounds outside the commercial season. In the Caspian Sea winter hunting of seals is permitted after 1 February, and hunting quotas have been established for mature and young animals.

Krylov, V. I. [DISTRIBUTION OF THE PACIFIC WALRUS.] Zool. Zhur. 41(1): 116-120. Jan. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 36

In Russian with English summary.

Mathisen, Ole A., Robert T. Baade, and Ronald J. Lopp. (Univ. Wash., Seattle 5.) BREEDING HABITS, GROWTH AND STOMACH CONTENTS OF THE STELLER SEA LION IN ALASKA. J. Mammal. 43(4): 469-477, 3 figs. Nov. 1962. WR 109: 36

Abstract: Steller sea lions (Eumetopias jubata) were observed from May to July. Harem boundaries were indistinct, and the size of a harem varied from day to day as did the number of unattached males near a harem. Copulation was observed from 31 May to 10 July, parturition from 24 May to 27 June. A cow nursed only her own pup or yearling. Harem groups slowly disbanded as pups learned to swim. Lengths of pups, yearlings, cows and bulls are summarized. Only non-commercial fishes, with the exception of one pink salmon, were found in 114 stomachs. Invertebrates were more frequent than fishes.

Nishiwaki, Masaharu, Seiji Ohsumi, and Toshio Kasuya. AGE CHARACTERISTICS IN THE SPERM WHALE MANDIBLE. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 50(12): 499-506. Dec. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 36

Popov, L. A. [DATA ON THE GENERAL MORPHOLOGY OF THE GREENLAND SEA HOODED SEAL (CYSTOPHORA CRISTATA ERXL.).] Trudy Soveshch. Ikhtiol. Komissiya Akad. Nauk SSSR 12: 180-191. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I227.] WR 109: 37
Translation [from Russian abstract].

Sergeant, D. E. THE BIOLOGY OF THE PILOT OR POTHEAD WHALE GLOBICEPHALA MELAENA (TRAILL) IN NEWFOUNDLAND WATERS. Bull. Fisheries Res. Board Canada (Ottawa) 132. viii + 84 p., illus. 1962. [From J. Mammal. 43(4), 1962.] WR 109: 37

Surkov, S. S. [HISTORY AND CURRENT OBJECTIVES OF RESEARCH ON MARINE MAMMALS IN THE NORTH.] Trudy Soveshch. Ikhtiol. Komissiya Akad. Nauk SSSR 12: 18-22. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 4I192.] WR 109: 37
Translation [from Russian abstract]. A survey is presented of studies on pinnipeds and white whales in the White, Barents and Kara Seas, before and after the October Revolution. The objectives for further research are enumerated.

Vaz-Ferreira, Raul, and Eduin Palerm. EFFECTOS DE LOS CAMBIOS METEOROLÓGICOS SOBRE AGRUPACIONES TERRESTRES DE PINNIPEDIOS. [THE EFFECTS OF METEOROLOGICAL CHANGES UPON TERRESTRIAL GROUPINGS OF PINNIPEDS.] Rev. Facul. Humanidades & Ciencias, Univ. de la Republica (Montevideo) 19: 281-293. Dec. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 37
[In Spanish.]

Vaz-Ferreira, Raul, and Blanca Sierra de Soriano. ESTRUCTURA DE UNA AGRUPACIÓN SOCIAL REPRODUCTURA DE OTARIA BYRONIA (DE BLAINVILLE), REPRESENTACIÓN GRAFICA. [THE SOCIAL ORGANIZATION OF A REPRODUCTIVE GROUP OF OTARIA BYRONIA (DE BLAINVILLE)--A GRAPHIC PRESENTATION.] Rev. Facul. Humanidades & Ciencias, Univ. de la Republica (Montevideo) 19: 253-260. Dec. 1961. [From J. Mammal. 43(4), 1962.] WR 109: 37
[In Spanish.]

Yablokov, A. V. (A. N. Severtsov Inst. Animal Morphol., Moscow, USSR.) [THE FATE OF THE HARP SEAL.] Priroda 2: 66-72, illus., maps. 1962. [From Biol. Abstr. 39(5), 1962.] WR 109: 37
[In Russian.] Pagophylus groenlandicus spends its entire life on the ice or in the water of the Arctic Ocean and the White Sea. The females bear one pup per year. Previously as many as 500,000 of these seals were killed annually. In 1928 the White Sea herd was estimated at 3.5 million. Current estimates based on aerial photography range from 400,000 to 700,000. Control measures are urged including full protection of ♀♀. A program aimed at obtaining more accurate population estimates through large scale marking of pups is recommended.

MAMMALS--OTHER GROUPS

Seaman, George A., and John E. Randall. (Univ. Puerto Rico, Mayaguez.) THE MONGOOSE AS A PREDATOR IN THE VIRGIN ISLANDS. J. Mammal. 43(4): 544-546. Nov. 1962. WR 109: 37
The mongoose (Herpestes auropunctatus) was reported attacking very young fawns, literally eating them alive. Attacks are characteristically made in the region of the mouth. Predation is also reported on the eggs of sea turtle (Chelonia mydas and the pelican (Pelicanus occidentalis).

BIRDS--GENERAL

Anderson, Kathleen S., and Herbert K. Maxfield. (Mass. Dept. Public Health, Boston.) SAMPLING PASSERINE BIRDS IN A WOODED SWAMP IN SOUTHEASTERN MASSACHUSETTS. Wilson Bull. 74(4): 381-385, 1 fig. Dec. 1962. WR 109: 38

During May to Sept., woodland birds were sampled through the use of mist nets placed along two lines each 1,032 feet long and bisecting each other at right angles. A total of 176 individual birds were netted (an average of 9 birds per 100 net hours).

Ezerskas, L. I. [THE USE OF ARTIFICIAL NESTING PLACES AS A MEANS OF ATTRACTING BIRDS WHICH NEST IN HOLLOW TREES IN THE LITHUANIAN SOVIET SOCIALIST REPUBLIC.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 105-109. 1959. [From Biol. Abstr. 40(3), 1962, from Referat. Zhur., Biol., 1961, no. 4D648.] WR 109: 38

Translation [from Russian abstract]. From 1953 to 1957, 11 hollow logs were observed and 22 spp. of birds were noted in them. They were occupied 33-90% of the time. Species composition of birds nesting in hollow trees varied with the type of forest. In pine forests Parus major constituted 1-4% of population, in mixed forest 16-30%, in broad-leaved up to 50%; Muscicapa hypoleuca made up 70%, 65%, and 45-50%, respectively. P. cristatus occupied 14% of Parus-occupied area in dry pine forests, but was not encountered in deciduous forests. Phoenicurus phoenicurus occupied 12-14% in pine forests, etc. Direction which the hole faced had almost no effect on occupancy.

Likhachev, G. N. [ATTRACTING BIRDS TO ARTIFICIAL NESTING PLACES.] Okhrana Prirody & Ozelenenie 1960(2): 96-101. 1960. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 4D652.] WR 109: 38

Translation [from Russian abstract]. A brief analysis of the effectiveness of attracting Muscicapa hypoleuca to nest in artificial nesting places. In the pest control of forest insects by using their natural enemies, good results have been obtained only for birds nesting in hollow trees. Broad experimental work is necessary to work out methods for attracting birds which nest in the open to the area selected.

Mazing, V. V. [SELECTION OF TREE AND SHRUB SPECIES TO ATTRACT NON-HOLE-NESTING BIRDS IN TOWNS.] Ornitologija (Moscow) no. 3. p. 425-429. 1960. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 19 Nov. 1962.] WR 109: 38

In Russian. Discusses the frequency of nesting of small passerine birds (both attractive and useful) in various tree and shrub species in the squares, parks and gardens of Tartu. Spruce, Thuja, lime and oak were the most frequently used for nesting.--Courtesy/ Frank M. Johnson.

Novácek, M., and K. Hudec. (Lab. Study Vital Actions by Film, Brno, Czechoslovakia.) ANALYSIS OF THE FOOD OF THE STARLING BY REMOTE-CONTROL PHOTOGRAPHY. Med. & Biol. Illustration 11(3): 172-177, illus. 1961. [From Biol. Abstr. 40(4), 1962.] WR 109: 38

The kinds and amounts of food collected by starlings (Sturnus vulgaris) have been studied by remote-control photography of the birds just before they enter the nest. An automatic camera was operated by the depression of a perch at the nest. A recording system registered the exposure of the film on a chart for the analysis of the timing and frequency of visits to the nest. It is suggested that this equipment should be of value in studying the feeding habits of the starling and other birds with special regard to crop depredation.

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Bianki, V. V. [DATA ON BIRD MIGRATIONS IN THE KANDALAKSHSKII GULF.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 21-30. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5D597.] WR 109: 38

Translation [from Russian abstract]. Registration of all birds observed on daily trips over islands within the area of Kandalakshskii game reservation was

carried out from July 1955 to June 1957. A total of 103 species were observed in flight. Migration periods are cited for 20 common species of passeres, 3 species of accipiters and 2 species each of owls, swifts, cormorants and Gavia stellata. More detailed treatment is given to the migration of sandpipers, gulls, anserines and auks.

Cade, Tom J. (Syracuse Univ., Syracuse 10, N. Y.) WING MOVEMENTS, HUNTING, AND DISPLAYS OF THE NORTHERN SHRIKE. Wilson Bull. 74(4): 386-408. Dec. 1962. WR 109: 39

Wing-flashing and tail movements of the shrike may startle prey into movement, and in the case of potential shrike predators these movements may serve to intimidate and distract the would-be captor.

de Carvalho, Cory T. SÔBRE A NIDIFICACÃO E PTERILOSE DE REINARDA SQUAMATA (AVES, APODIDAE). [ON THE NEST-MAKING AND PTERYLOSIS OF REINARDA SQUAMATA (AVES, APODIDAE).] Papéis Avulos Dept. Zool. 14(32): 329-337, illus. 1962. [From Biol. Abstr. 40(4), 1962.] WR 109: 39

[In Portuguese] with English summary. Notes are given on this large swift in Belém (Pará), and the lower Mucajai River (Rio Branco), in Brazil. The nest, construction material, eggs, incubation, and young are described.--From auth. summ.

Denisova, M. N. [FEATURES OF THE DEVELOPMENT OF OPEN- AND CLOSED-NESTING BIRDS AS RELATED TO THE EVOLUTIONS OF THE TYPES OF NESTING.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 95-103. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D618.] WR 109: 39

Translation [from Russian abstract].

Derim, E. N. [OBSERVATIONS ON THE NESTING OF THE EUROPEAN SPOTTED FLYCATCHER (MUSCICAPA STRIATA PALL).] Nauch. Doklady Vysshei Shkoly. Biol. Nauk 1: 27-31. 1960. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D629.] WR 109: 39

Translation [from Russian abstract]. Observations were made on 12 nests of M. striata in Moscow oblast from 1956 to 1958. For 1st few days while nestlings are being fed, most insect food is brought by male. To determine the nature of stimulus which causes brooding and feeding, 3 series of experiments were carried out, consisting of exchanging contents of nests, disguising nests, and changing surrounding objects. A nest located in familiar surroundings is the strongest stimulant which drives a bird to brood or feed; importance of contents of nest as an orienting point decreases from 1st days of brooding. Brooding instinct is gradually intensified, but toward the end of nesting period of nestlings, feeding instinct is intensified and bird can no longer be forced to brood. Brooding instinct cannot be transformed into feeding instinct before a certain time.

Eastwood, E., G. A. Isted, and G. C. Rider. (Baddow Res. Lab., Great Baddow, Essex, England.) RADAR RING ANGELS AND THE ROOSTING BEHAVIOUR OF STARLINGS. Proc. Roy. Soc., Biol. Sci., Ser. B, 156(963): 242-267, 22 figs. 31 July 1962. WR 109: 39

An information-filled article on the use of radar for studying roosting behavior of starlings and on the results obtained. Information is given on seasonal differences in flights to and from the roosts, differences in flights associated with weather, light intensity, time of day, etc. Radar signal amplitude measurements furnished the basis for an estimate of 500,000 starlings in one roost.--From abstr.

Filonov, K. P. [THE MIGRATION OF GROSBEAKS.] Kraevedcheskii Sb. Buryatsk. Fil. Geogr. Obshch. SSSR 4: 133-135. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 39

[In Russian.]

Gál, I. K. DURATA ACTIVITĂTII DIURNE LA UNELE SPECII DE PĂSĂRI ÎN CURSUL UNUI AN. [DAILY ACTIVITY PERIODS OF SEVERAL BIRDS FOLLOWED DURING THE COURSE OF ONE YEAR.] Studii Cercetari Biol. (Cluj) 12(1): 103-121. 1961. [From Biol. Abstr. 40(2), 1962.] WR 109: 40

[In Rumanian] with French and Russian summaries. At the Botanical Garden in Cluj, 31 species of birds were studied; and behavioral distinctions were observed for the following: sedentary granivores, sedentary insectivores, piciformes, sedentary omnivores, insectivores (summer), and granivores (summer) in regard to duration of activity in relation to the length of the solar day, chronological commencement and retirement of activity, and awakening period in regard to the rising sun.--Auth. summ. transl.

Gladkov, N. A. [GEOGRAPHICAL VARIABILITY OF NESTING TIMES IN BIRDS.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 71-73. 1959. [From Biol. Abstr. 40 (6, pt. 1), 1962.] WR 109: 40

[In Russian.] Basis of periodicity of nesting is periodicity of feeding conditions. There is an analogy between seasonality of reproduction and seasonal migrations of birds. A distinction must be made between factors causing development of gonads and those which make it possible to realize reproductive potential.

Graber, Richard R., and Sylvia Sue Hassler. (Ill. Nat. Hist. Surv., Urbana.) THE EFFECTIVENESS OF AIRCRAFT-TYPE (APS) RADAR IN DETECTING BIRDS. Wilson Bull. 74(4): 367-380, 9 figs. Dec. 1962. WR 109: 40

Aircraft radars are less powerful than large fixed-base weather radars, but the aircraft types are readily available and cheaper. The "blindness" of radar at short range is an important weakness in this method of studying bird migration. Echoes were not received from targets within a range of 1,000 feet; echoes were recorded from a maximum of 13,000 feet.

Hamilton, William J. III. (Calif. Acad. Sci., San Francisco 18.) DOES THE BOBOLINK NAVIGATE? Wilson Bull. 74(4): 357-366, 2 figs. Dec. 1962. WR 109: 40

An adult female was captured in N. Dak. on 9 Aug. 1959 and shipped to Berkeley, Calif. It escaped on 1 Sept. 1959. On the three nights prior to escape this bird was held in a cage that automatically recorded the directional components of migratory activity at night. On the first night the preferred direction almost coincided with the home direction; on the third night the direction was parallel with the natural route of migration of the population from which the bird was derived; the direction on the second night was intermediate between the directions on the other two nights. This bird was recaptured in N. Dak. on 1 June 1960 at its earlier capture site.

Johnston, Richard F. A REVIEW OF COURTSHIP FEEDING IN BIRDS. Kans. Ornithol. Soc. Bull. 13(4): 25-32. Dec. 1962. WR 109: 40

"In summary we may note that courtship feeding in birds is characteristic of many species 1) at time of copulation, 2) at time of incubation, or 3) throughout most of the pre-parental phases of reproductive behavior. The phyletic development and adaptive significances are diverse, indicating multiple and unrelated evolutionary origins."

Kuchin, A. P. [THE ECOLOGY OF SOME FEATHERED PREDATORS OF THE BIE-KATUNSKOE INTERFLUVE.] Zool. Zhur. 40(5): 730-735. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 2I157.] WR 109: 40

Translation [from Russian abstract]. Original with English summary. The number of available murine rodents in the Altai foothills--few in 1956, 1958, and 1959, and up to 156 burrows per ha in 1957--caused a sharp change in the diet of the larger spotted eagle. Thus, in 1956, 85% of its diet consisted of useful animals--quail, corncrake, and partridge; in 1957, when field mice and hamsters made up 95% of the catch, the eagles wiped out about 500 rodents, clearing 3.5 ha completely. This also caused a change in the number of kestrels (in 1957 there were up to 5 nests per km of pine forest margin, but in 1958, only 2), and also in the duration of feeding of nestlings (27 days in

1957, 34 days in 1959); the number of eggs per clutch of long-eared owls also changed from 4-6 in 1955 and 1959 to 9 in 1957. Information is given on the biology of reproduction of the spp. mentioned and of the kite. Nestlings of the kite and the kestrel were exchanged for those of the eagle and the owl: the eagle destroyed the changelings at once, but the owl accepted them into the nest.

Kumari, E. V. [THE MIGRATION OF BIRDS AS A ZOOGEOGRAPHIC PROBLEM.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 141-149. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D592.] WR 109: 41
Translation [from Russian abstract].

Lint, A. Ya. [OBSERVATIONS ON THE DAILY RHYTHM OF STARLINGS IN THEIR OVERNIGHT RESTING PLACES IN AND NEAR KHAAPSALU IN THE POST-NESTING PERIOD.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 169-177. 1959. [From Biol. Abstr. 40(2), 1962, from Referat. Zhur., Biol., 1961, no. 4D625.] WR 109: 41
Translation [from Russian abstract]. All phases of the flights of starlings to and from their overnight resting places (flight to feeding places, gathering in trees, flight to overnight resting place, morning awakening, flight back to the feeding place, etc.) were noted on a time scale related to the rising and setting of the sun. Every day for 5 years the starlings used the same overnight resting place. Settling for the night is preceded by a reconnaissance conducted by the first flock to arrive.

Nilsson, Leif. VADARSTRÄCKET VID HULLSJÖN 1959 OCH DESS BEROENDE AV TEMPERATUREN. [STUDIES ON THE MIGRATION OF WADERS AT LAKE HULLSJON (SWEDEN) IN 1959 AS CORRELATED WITH THE TEMPERATURE.] Vår Fågelvärld 21(1): 15-25, illus. 1962. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 41
[In Swedish] with English summary. Daily counts of birds resting on shores and banks of lake were carried out in months of May, Aug., and Sept. Various diagrams and charts are given to show correlations with temperature. Spring migration was stimulated by a rise in temperature, and an intensified autumn migration followed a drop in temperature.--From auth. summ.

Phillips, A. R. EMIGRACIONES Y DISTRIBUCIÓN DE AVES TERRESTRES EN MÉXICO. [MIGRATIONS AND DISTRIBUTION OF TERRESTRIAL BIRDS IN MEXICO.] Rev. Soc. Mex. Hist. Nat. 22: 295-311. 1961. [From Biol. Abstr. 40(5), 1962.] WR 109: 41
In Spanish. Migrations of birds in Mexico are extremely varied. While most of them migrate to S and SE, following form of land, others disperse in different directions. There is no known case of a regular northbound movement in winter, although dispersion of some young birds (egrets, etc.) towards N in summer and perhaps fall is expected.--A. M. Sandoval.

Poznanin, L. P. [SOME FORMS OF ADAPTATION OF NESTLINGS TO INDEPENDENT LIFE.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 215-222. 1959. [From Biol. Abstr. 40(2), 1962, from Referat. Zhur., Biol., 1961, no. 4D619.] WR 109: 41
Translation [from Russian abstract]. One of the most prominent forms of adaptation of nesting altricial birds is the ability to leave the nest early which develops in birds nesting on the ground or in open nests. For these birds this "premature" departure from the nest is a normal occurrence which aids survival of the brood (dispersal of the nestlings). Other adaptations are described.

Rootsmyae, L. T. [THE FALL MIGRATION OF AQUATIC AND COASTAL BIRDS ALONG THE NORTHWEST SHORELINE OF LAKE CHUDSKOE FROM 1954 TO 1956.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 253-259. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5D594.] WR 109: 41
Translation [from Russian abstract]. Observations were carried out over a 3 km sector of the shoreline from the beginning of July until the lake froze over in Nov. During that period 25 spp. of sandpipers, 22 of geese, 12 of gulls, 3 of grebes, 2 of loons, and 1 of gressorial birds were observed. Data are given for common migratory species relative to the frequency of occurrence per 1 km of shoreline (by month), the flight periods, and the size of flocks.

Ryabov, V. F. [SEASONAL DISTRIBUTION AND MIGRATION OF QUERQUEDULA QUERQUEDULA L.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 261-269. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5D610.] WR 109: 42

Translation [from Russian abstract]. A total of 11,902 Q. querquedula were ringed in USSR from 1925 to 1956, mainly on Astrakhanskii and Okskii game reservations. Recovery of rings was at the rate of 3.3% towards the beginning of 1957. Highest levels of recovery relate to Q. querquedula taken in first 18 months. A female Q. querquedula was taken at the age of 17.5 years, another at the age of 20 years. Rate of capture is highest from Mar. to May and Aug. through Sept. Distribution of Astrakhan population of Q. querquedula is reviewed in relation to each month. The species converges on the Volga river delta to molt from regions of northern Kazakhstan and the entire western Siberia. Ringed Q. querquedula fly away immediately after ringing in a W direction over regions adjacent to the Azov Sea and N coastline of the Black Sea, or in a S-SW direction over Transcaucasia. Q. querquedula which molt in the Volga delta, winter in southern Europe, Asia Minor and Africa. Data are given on 32 Q. querquedula with foreign rings taken in USSR.

Schaller, George B., and John T. Emlen, Jr. (Univ. Wis., Madison.) THE ONTOGENY OF AVOIDANCE BEHAVIOR IN SOME PRECOCIAL BIRDS. Animal Behaviour 10 (3&4): 370-381, 11 figs. July-Oct. 1962. WR 109: 42

Avoidance responses appeared before the age of 10 hours, and their intensity gradually increased until the age of 100-140 hours. Intensity of response was not affected by the size, color, or form of the test object, except that in older birds living objects induced stronger responses than non-living ones. The property of strangeness of an object appeared to be the critical factor eliciting an avoidance response, repeated exposure being followed by decline in response even after development of the avoidance response.

Skuodis, V. [DATA ON RINGING OF BIRDS IN LITHUANIA.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 271-276. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5D537.] WR 109: 42

Translation [from Russian abstract]. From 1929 to 1956, 90,000 birds were ringed in Lithuania and 1015 ring recoveries were obtained. Large scale ringing took place regularly prior to 1940 only at ornithological station Ventes Ragas. Activity was expanded substantially after 1945. Ringing of Fulica atra, Cygnus olor and other species was carried out since 1952 in the Zhuvintas game reservation. Data are given on results of ringing of F. atra, Anas platyrhynchos, Nyroca ferina, Corvus cornix, C. frugilegus, Sturnus vulgaris, Parus major and Cygnus olor. Basic direction of fall migration of a majority of the species was to SW, SWS and WSW. Winter range of birds in Lithuania is 30 times as large in area as its summer equivalent. A gradual displacement of wintering sites is clearly indicated for some birds, i.e., Sturnus. It was determined on basis of ringing that 21.2% ringed swans died during the winter of 1955/1956 on wintering sites due to bad weather.

Stasz, Clarence F. BIRDS' CELESTIAL NAVIGATION. Cassinia (43): 10-12. 1958 [1960]. [From review by R. J. Newman, Bird-Banding 33(1), 1962.] WR 109: 42

A migrating bird is compared with a man adrift on a raft equipped with a chronometer, plumb bob, and an improvised mast. The problems that a man would have under these conditions are vividly described and it is concluded that he would need superhuman powers to be able to navigate.

Thielcke, Gerhard. STAMMESGESCHICHTE UND GEOGRAPHISCHE VARIATION DES GESANGES UNSERER BAUMLÄUFER (CERTHIA FAMILIARIS L. UND CERTHIA BRACHYDACTYLA BREHM). [EVOLUTION AND GEOGRAPHICAL VARIATIONS OF THE SONGS OF OUR TREE CREEPERS.] Z. Tierpsychol. 18(2): 183-204. 1961. [From review by M. M. Nice, Bird-Banding 33(1), 1962.] WR 109: 42

[In German] with English summary. This paper presents a detailed study of 385 songs from 44 Certhia brachydactyla and 128 songs from 23 C. familiaris analyzed with a sound spectograph. Individual and geographic variations are shown.

Ulfstrand, Staffan. (Zool. Inst., Lund, Sweden.) ON THE NONBREEDING ECOLOGY AND MIGRATORY MOVEMENTS OF THE GREAT TIT (PARUS MAJOR) AND THE BLUE TIT (PARUS CAERULEUS) IN SOUTHERN SWEDEN, WITH NOTES ON RELATED SPECIES. Vår Fågelvärld Suppl. 3: 1-145, illus. 1962. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 43

[In English] with Swedish summary. Discussions are given of feeding habits of tits, treecreeper, and goldcrest during nonbreeding season, with ecological comparisons in various areas; intensity of food seeking and occurrence of aggressive behavior, seasonal and annual population fluctuations, and autumn movements as recorded at Falsterbo. It was found that great tit based its food economy on beech mast, and this was also a positive factor for blue tit. When mast was available, there was greatly improved carrying capacity in beech and mixed woods. Bird census data indicated that population density for great tit and blue tit (but not the marsh tit) was much higher in winters that had a good beech mast crop. In these years there seems to be a large scale influx of these spp. in beech woods. Migration towards south is greater when beech mast is scarce.

Zubavichus, T. [SPRING MIGRATION OF BIRDS IN THE ZHUVINTAS GAME RESERVATION FROM 1953 TO 1957.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 117-120. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D593.] WR 109: 43

Translation [from Russian abstract]. Short characterization is given for flights of migratory birds and spring appearance of nesting rails, gulls and divers on Lake Zhuvintas (Lithuania).

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Artyukhovskii, A. K., and N. A. Kharchenko. [THE DISTRIBUTION OF SOME INSECTIVOROUS BIRDS ON THE RIGHT BANK (EASTERN SIDE) OF THE TRACT OF THE VORONEZH FORESTRY INSTITUTE.] Collected Works on Forestry of the Univ. (Voronezh). p. 17-23. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 43

[In Russian.] Data are given by species and habitat on the number of birds seen or heard along a route 100 m wide near Voronezh.

Baker, Rollin H., and Robert L. Fleming. (Mich. State Univ., East Lansing.) BIRDS NEAR LA PESCA, TAMAULIPAS, MEXICO. Southwestern Nat. 7(3-4): 253-261. Dec. 1962. WR 109: 43

Fifty-four species are reported, some of which are new records for the area.

But'ev, V. T. [THE WINTERING OF BIRDS ON THE NORTH OF NOVAYA ZEMLYA.] Ornitologiya (Moscow) 2: 99-101. 1959. [From Biol. Abstr. 40(3), 1962, from Referat. Zhur., Biol., 1961, no. 4D639.] WR 109: 43

Translation [from Russian abstract]. According to observations made from 1955 to 1957 in area of Cape Zhelaniya (76-77°N), a small number of birds spend the winter there: Atlantic auk (Uria lomvia), and also possibly alcid (Alle alle), gull (Pagophila alba), and duck (Clangula hyemalis). Isolated individuals of these spp. were encountered even in Jan. and Feb. Death of a great many wintering Uria spp., due to starvation was observed in 1956. Critical factor in the possibility of overwintering by marine birds in north of Novaya Zemlya is whether there is access to food on deep water.

Davis, W. Marvin, and Arthur F. Halloran. (Univ. Okla., Norman.) NOTES ON THE BIRDS OF THE WICHITA MOUNTAINS WILDLIFE REFUGE. Southwestern Nat. 7(3-4): 262-266. Dec. 1962. WR 109: 43

Observations are reported on 16 spp., of which 14 are new for the area.

Devitt, Otto E. (83 Harding Blvd., Richmond Hill, Ontario, Canada.) FURTHER ADDITIONS TO THE BIRDS OF SIMCOE COUNTY, ONTARIO. Canadian Field-Nat. 76(3): 153-158. July-Aug. 1962. WR 109: 43

This list supplements an earlier list and brings to 279 the total number of birds recorded in Simcoe County. Nesting has been recorded for 143 spp.

Gabrielson, Ira N. (Wildl. Mgmt. Inst., Wire Bldg., Washington, D. C.) RECENT BIRD NOTES FROM THE BLUE SEA LAKE AREA IN QUEBEC. Canadian Field-Nat. 76(4): 192-199. Oct.-Dec. 1962. WR 109: 44

A list of 54 spp. is given with annotations of population changes since 1942.

Graczyk, Ryszard. PTAKI ŚRÓDMIEŚCIA MIASTA ŁODZI. [THE BIRDS OCCURRING IN THE CENTRE OF THE TOWN OF ŁÓDŹ.] Ochrona Przyrody 28: 61-82, 1 fig. 1962. WR 109: 44

In Polish with English summary. A systematic study of the species of birds nesting in the center of town with a determination of the status of certain species. A total of 64 species was recorded, forty species as breeding birds. A large number of house sparrows was recorded and a marked increase in the status of the blackbird was noted. The occurrence of Sylviidae depended upon a large concentration of shrubs. Partridge were found penetrating urban habitats, nesting in large gardens and small patches of fields around the outskirts of town.--From auth. summ.

Hansen, Lindhard. FUGLE PÅ LOLLAND-FALSTER. [BIRDS AT LOLLAND-FALSTER (DENMARK).] Dansk Ornithol. Forenings Tidsskr. 56(1): 1-32, illus. 1962. [From Biol. Abstr. 39(5), 1962.] WR 109: 44

In Danish. Detailed field notes are given on 45 spp. In most cases records began about 1948 but in some instances those as early as 1926 are included.

Izmailov, I. V. [DATA ON THE BIRDS OF THE FOREST-STEPPE ZONE.] Uchenye Zapiski Buryatskii Gosudarst. Pedagog. Inst. 15: 119-139. 1958. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D607.] WR 109: 44

Translation [from Russian abstract]. A description of biotopes with lists of the characteristic plentiful, usual, and rare birds. A total of 120 spp. was noted, including 100 spp. of nesting birds; there were many specimens of Tringa hypoleucos, Passer montanus, Emberiza leucocephala, E. aureola, and Oenanthe isabellina. Bird life of forest-steppe region of Buryatiya is a composite of representatives of E. Siberian mountain taiga, Mongolian steppes, and of widely distributed spp.

Józefik, Mieczysław. SPOSTRZEZENIA NAD ORNITOFAUNA PÓŁNOCNEJ CZEŚCI BESKIDU SLASKIEGO W ZIMIE 1956/57. [OBSERVATIONS ON THE ORNITHOFAUNA OF THE NORTHERN PART OF BESKID ŚLASKI MOUNTAINS IN THE WINTER 1956/1957.] Acta Ornithol. (Warsaw) 6(6): 53-69. 1961. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 44

[In Polish.] Mild winter resulted in anomalies in breeding time and spring arrivals.

Solyanik, G. A. [SOME OBSERVATIONS ON BIRDS ON BOUVET ISLAND.] Inform. Byull. Sovet. Antarktol. Ekspeditsii 13: 34-37. 1959. [From Biol. Abstr. 40 (5), 1962, from Referat. Zhur., Biol., 1961, no. 3D512.] WR 109: 44

Translation [from Russian abstract]. Bouvet Island (E part of Atlantic sector of Antarctic, 54° 26' S latitude, 3° 24' E longitude) is covered with ice many meters thick and is surrounded by rocks above and below the water. On the island there was a mixed colony of penguins numbering more than 1000 birds.

Uspenskii, G. A., and I. M. Ganya. [THE STATUS OF KNOWLEDGE OF THE MOLDAVIAN ORNITHO-FAUNA, AND IMMEDIATE RESEARCH PROJECTS ON THE SUBJECT.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 311-316. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5D542.] WR 109: 44

Translation [from Russian abstract]. Study of birds was primarily faunal in its initial stage. Present studies are in the area of ecology and quantity of species. The central part of Moldavia was subject to preliminary surveys, then data were compiled on distribution and number of dendrophile species (Paridae) and procedures were tested for attracting birds. Resettlement of Picus syriacus, Streptopelia decaocto into bird fauna of Moldavia is discussed.

Uvarova, V. Ya. [THE FORMATION OF THE BIRD LIFE OF SHELTERBELT PLANTINGS IN STALINGRAD OBLAST.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 305-310. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D596.] WR 109: 45

Translation [from Russian abstract]. Bird distribution and species composition were related to age of shelterbelt planting. Overall, birds of shelterbelt plantings are comprised of 26 spp. Bird life of forest strips is sparser than that of natural forests and also than that of plantings near farmhouses.

Zaletaev, V. S. [BIRDS OF THE ARTIFICIAL FOREST PLANTINGS OF THE SARATOV STEPPE AREA OF THE TRANSVOLGA.] Okhrana Prirody & Ozelenenie 2: 33-38. 1960. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 4D597.] WR 109: 45

Translation [from Russian abstract]. Small passerines and thrushes use the forest strips for feeding, resting, and shelter. Chrysomelids and cercopids were found in the gastric contents of wood warblers and garden warblers. Species composition of birds in young forest strips and those of intermediate age is limited to xerophilic steppe and bush species (ortolan, red-backed shrike, Sylvia communis, and common European partridge). Size of bird populations is usually small because of poor defenses of nesting place and absence of drinking water close by. For increasing number of useful birds in steppe forest strips, forest and forest-edge species must be acclimated. Construction of small ponds for drinking water, planting thick underbrush, and interdiction of hunting for common European partridge is recommended.

BIRDS--POPULATIONS & FLUCTUATIONS

Gibb, J. A. (Animal Ecol. Div., D.S.I.R., Wellington, New Zealand.) THE IMPORTANCE OF TERRITORY AND FOOD SUPPLY IN THE NATURAL CONTROL OF A POPULATION OF BIRDS. Sci. Review 20(2): 20-21. 1962. WR 109: 45

"To summarize, then, the population of tits was evidently being controlled principally by density-dependent mortality from starvation in winter; but the flexible restrictions to population density set by the birds' own territorial behaviour in autumn must have materially reduced intra-specific competition for the limited stocks of food later in the winter. These two systems are not alternatives, but are complementary; and both together contribute to the effective control of the population."

Golley, Frank B. (Savannah River Operations Office, Aiken, S. C.) THE EIGHT-YEAR TREND IN QUAIL AND DOVE CALL COUNTS IN THE ABC SAVANNAH RIVER PLANT AREA. Trans. 27th N. Am. Wildl. Conf. p. 212-224, 2 figs. 1962. WR 109: 45

The response of quail and doves to land abandonment was studied. Calling quail increased within the plant area but remained constant outside. Doves fluctuated widely around a mean of 30 birds calling inside and outside. This differential response was partly explained by the different ecological requirements of the two species. The influence of variables such as time of year, observer, temperature, and wind were also evaluated.--Auth. abstr.

Meunier, Karl. GRUNDSÄTZLICHES ZUR POPULATIONDYNAMIK DER VÖGEL. [THE FUNDAMENTALS OF THE POPULATION DYNAMICS OF BIRDS.] Z. Wiss. Zool. 163(3/4): 397-445, illus. 1960. [From Biol. Abstr. 40(3), 1962.] WR 109: 45

[In German.]

Syroechkovskii, E. E. [A METHOD OF COUNTING BIRDS NESTING IN COLONIES IN DENSE GROVES OF TREES.] Trudy Astrakhansk. Gosudarst. Zapovednika 4: 317-323. 1958 (1959). [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1961, no. 4D578.] WR 109: 45

Translation [from Russian abstract]. A study was made of the number and distribution of the nests of piscivorous birds of the northern Caspian area (Phalacrorax carbo, Platalea leucorodia, Plegallis falcinellis, and 5 spp. of Ardea) nesting in dense woody thickets. A census in Dengizskii showed that the

method of "sample areas" does not give accurate enough results (the error may be tenfold), since nests of different species and of a single species may be distributed unevenly over the whole colony. Reliable results are obtained only by counting all the nests.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Brovkina, E. T. [DATA ON THE DIET AND FOREST-ECONOMIC IMPORTANCE OF THRUSHES IN MOSCOW OBLAST.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 32-40. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D621.] WR 109: 46

Translation [from Russian abstract]. Results of an analysis are given of 494 food samples taken from 85 nestlings and of gastric contents of 33 adult thrushes in Moscow area. In the diet of thrush nestlings (especially in redwing and fieldfare), a critical role is played by earthworms. Next in importance are insects whose importance increases as fewer earthworms are consumed. Earthworms are evidently also of great importance in the diet of adult thrushes during nesting period. In fall the largest item of the diet of fieldfare is vegetable food; in that of redwing vegetable food and insects; and in that of song thrush, insects. Earthworms are not important at all at this time, although it should be kept in mind that they are quickly digestible, which may contradict results of analysis of gastric contents.

Dyunin, A. G. [THE BEHAVIOR OF BIRDS AT WINTERING PLACES DURING COLD SNAPS.] Okhrana Prirody & Ozelenenie 2: 39-41. 1960. [From Biol. Abstr. 40 (3), 1962, from Referat. Zhur., Biol., 1961, no. 4D637.] WR 109: 46

Translation [from Russian abstract]. Describes mass death of birds at a wintering place in Azerbaidzhan during frosts and snowfalls. Number of flamingoes was reduced catastrophically in 1950. Of nesting birds, Porphyrio porphyrio, Francolinus francolinus, and Phasianus spp. were especially hard hit. Their population was gradually restored.

Green, Janet C. (1923 Greysolon Rd., Duluth 12, Minn.) DESTRUCTION OF MIGRATING BIRDS AT THE DULUTH CEILOMETER. Flicker 34(1): 3-6. Mar. 1962. WR 109: 46

On the night of 11 Sept. 1961, approximately 1,000 birds were killed at the Duluth ceilometer. There were 28 spp. among the 186 birds picked up and identified. This included 17 spp. of warblers.

Kadochnikov, N. P. [DATA ON THE DIET OF THE NESTLINGS OF INSECTIVOROUS BIRDS OF THE SAVAL'SKOE FOREST TRACT OF VORONEZH OBLAST AND AN EVALUATION OF THEM FROM THE POINT OF VIEW OF THE ECONOMIC SIGNIFICANCE FOR FORESTRY OF THE NESTLINGS.] Trudy Vsesoyuz. Inst. Zashchita Rastenii 15: 115-316. 1960. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 4D620.] WR 109: 46

Translation [from Russian abstract]. A study was made of the diet of 16 spp. of birds. For many of them detailed lists of food are given. In Saval'skoe Forest Tract all spp. studied except hooded crow are useful to some degree for the forest. Caterpillars of pine, pine-shoot, and gypsy moths are exterminated by Parus major; butterflies of Bupalus piniarius by P. major, Muscicapa albicollis, redstart, and ortolan; caterpillars and cocoons of Tortrix viridiana by starling; larvae of pine sawfly by great spotted woodpecker, blackbird, song thrush, red-backed shrike, and starling.

Mitchell, J. M. THE BIRD PROBLEM IN THE NATURAL REGENERATION OF PINUS RADIATA ON KAINGAROA FOREST, NEW ZEALAND. Sylva (Edinburgh) no. 42. p. 4-8 + 4 photos. 1961/1962. [From Commonwealth Forestry Bur., Centralized Title Serv. Cards, 16 Apr. 1962.] WR 109: 46

Seed-eating birds are one of the most destructive agencies affecting P. radiata regeneration throughout New Zealand. This paper describes investigations carried out from 1955 to 1960 on the natural regeneration of P. radiata

with special reference to seed-destroying birds such as the chaffinch and the Californian quail. Control measures include poison baits, soil scarification and aerial sowing with treated seed.--Courtesy/ Frank M. Johnson.

Roseberry, John L. (Southern Ill. Univ., Carbondale.) AVIAN MORTALITY IN SOUTHERN ILLINOIS RESULTING FROM SEVERE WEATHER CONDITIONS. Ecology 43(4): 739-740. Autumn 1962. WR 109: 47

Summary: A prolonged period of snow coverage in early 1960 increased avian mortality in parts of southern Ill. Meadowlarks and bobwhites constituted 45% of 112 avian deaths observed. Starlings and other blackbirds comprised 20% of the recorded mortality. The severe weather may have had an adverse effect on bobwhite fecundity during the subsequent breeding season. A large amount of available corn and soybeans possibly prevented mortality from being much greater.

Strnad, Forest. (Kasson, Minn.) BIRDS KILLED AT THE KROC-TV TOWER, OSTRANDER, MINNESOTA. Flicker 34(1): 7-9. Mar. 1962. WR 109: 47

During the period 2 Sept.-9 Oct. 1961, there were at least 1,547 birds of 66 spp. picked up dead or injured near the base of the tower.

BIRDS--PARASITES AND DISEASES

Appleby, E. C. (Royal Vet. Coll., London, England.) MYCOSIS OF THE RESPIRATORY TRACT IN PENGUINS. Proc. Zool. Soc. London 139(3): 395-401. Oct. 1962. WR 109: 47

Respiratory mycosis was the most frequent cause of death of penguins in the collection of Royal Zoological Society of Scotland during a 40-year period. The causal organism was usually Aspergillus fumigatus. Deterioration of physical vigor was thought to be an important cause of infection.

Leibovitz, Louis. UNUSUAL BIRD-PARASITE CASES AND OVER-ALL PARASITE INCIDENCE FOUND IN A DIAGNOSTIC LABORATORY DURING A FIVE-YEAR PERIOD. Avian Diseases 6(2): 141-144. May 1962. WR 109: 47

A report of the occurrence of an intestinal sarcosporidiosis, or a closely related condition in a Canadian goose; quill mites (Syringophilus) in feathers from Canadian geese; and proventicular infestation of the trematode (Ribeiroia ondatrae) in ducks (domestic). The quill mite is considered as a new species but is not described.--Courtesy/ Louis N. Locke.

Mykytowycz, R. "LIMY-BIRD DISEASE" IN CHICKS OF THE TASMANIAN MUTTON-BIRD (PUFFINUS TENUIROSTRIS). Avian Diseases 7(1): 67-79. 1963. WR 109: 47

"Limy-bird disease" is due to the formation of large uric acid concentrations in the cloaca which block and distend the lower alimentary canal, leading to further pathological changes, and sometimes to death. The cause of these uric acid concentrations has not yet been determined.--Louis N. Locke.

GAME BIRDS--GENERAL

Tarasov, M. P. [DATA ON THE ECOLOGY OF THE WILD FOWL OF PINE FORESTS IN THE WESTERN KHAMAR-DABAN MOUNTAIN RANGE.] Izvest. Irkutskogo Sel'skokhoz Inst. 18: 243-258. 1960. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1962, no. 6I205.] WR 109: 47

Translation [from Russian abstract]. Perdix daurica, Lagopus albus, Lyrurus tetrix, Tetrastes bonasia, and Tetrao urogallus were found in 1958 and 1959. They were few in number: for 10 km of route along principal stations average was 4.7 T. bonasia in snowless areas, three in snow; for T. urogallus respective figures were 0.7 and 0.5; remaining spp. were seen more rarely. Average game for a hunter/year is up to 6.3 T. bonasia and 1.2 T. urogallus. Possible causes for the small numbers and the distribution of spp. in these temporary habitats are discussed. Data are given on diet of T. urogallus from from July to Sept.

QUAIL

Hill, R. W., and R. G. Raymond. APPARENT NATURAL INFECTION OF COTURNIX QUAIL HENS WITH THE VIRUS OF AVIAN ENCEPHALITIS -- CASE REPORT. Avian Diseases 6(2): 226-227. May 1962. WR 109: 48

Coturnix quail chicks inoculated with an avian encephalitis (AE) virus (isolated from a chicken) were maintained in a large room where breeder quail were kept. Fifteen days after inoculation of the coturnix quail, there was a marked decline of egg production among the coturnix breeders, the adults remaining otherwise asymptomatic. Some chicks hatched from eggs produced during the recovery from the decline showed ataxic behavior characteristics of chicks with AE.--Courtesy/ Louis N. Locke.

Komarek, E. V., Sr. [editor]. (Tall Timbers Res., Inc., Tallahassee, Fla.) THE COOPERATIVE QUAIL STUDY ASSOCIATION / MAY 1, 1931-MAY 1, 1943. Tall Timbers Res. Sta., Misc. Publ. no. 1. [iv] + 500 p., illus. Nov. 1961. WR 109: 48

This is a compilation of reports of the Cooperative Quail Study Association during 1931-1943. In the course of the study, reports of research findings and resulting management recommendations were prepared in limited editions, chiefly for use of members of the Association. These reports are now available in this volume. Included are some early papers not readily available to the current generation of wildlifers.

Peckham, M. C., and R. Reynolds. (Cornell Univ., Ithaca, N. Y.) THE EFFICACY OF CHEMOTHERAPEUTIC DRUGS IN THE CONTROL OF EXPERIMENTAL ULCERATIVE ENTERITIS IN QUAIL. Avian Diseases 6(1): 111-118. 1962. WR 109: 48

Bacitracin at 100, 200, and 400 g per ton of feed; streptomycin, 2 g per gallon of drinking water; furazolidone, 200 g per ton of feed; and, aureomycin, 200 g per ton of feed, were tested for control of ulcerative enteritis of quail. Bacitracin at all levels and streptomycin were completely effective in protecting quail during medication period of 25 to 38 days. Some losses occurred in both the quail medicated with furazolidone and in the group medicated with aureomycin. Following withdrawal of medication and re-exposure to organism of ulcerative enteritis there was a variable amount of resistance to the infection.--Courtesy/ Louis N. Locke.

Reese, Ellen P., and T. W. Reese. (Mt. Holyoke Coll., South Hadley, Mass.) THE QUAIL, COTURNIX COTURNIX, AS A LABORATORY ANIMAL. Exptl. Analysis Behavior 5(2): 265-270, illus. 1962. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 48

On the basis of our somewhat limited observations, we believe that C. coturnix should prove a useful experimental animal for comparative studies, for basic research in learning, motivation, and perhaps social behavior, and for teaching the analysis of behavior in demonstrations and laboratory courses. --From auth. summ.

Stoimenov, K. A. [THE HELMINTH FAUNA OF COTURNIX COTURNIX IN BULGARIA.] Izvestiya na Tsentralniya Vet. Inst. za Zarazni & Parazit. Bolesti (Sofia) 2: 319-323. 1961. [From Helminthol. Abstr. 31(3), 1962.] WR 109: 48

In Bulgarian with English and Russian summaries. Of 113 coturnix autopsied 72 harbored helminths.

PHEASANTS

Kaluzhina, M. V. [DATA ON THE BIOLOGY AND ECONOMIC IMPORTANCE OF THE ZERAVSHAN PHEASANT. THE ZERAVSHAN PHEASANT PHASIANUS COLCHICUS ZERAFSCHANICUS TARN.] Trudy Samarkandskogo Univ. 110: 37-42. 1961. [From Biol. Abstr. 41 (3), 1963, from Referat. Zhur., Biol., 1962, no. 6I215.] WR 109: 48

Translation [from Russian abstract]. Pheasant range along the Zeravshan River has increased as a result of agricultural reclamation of the desert. In winter and spring they stay in the thickets of Elaeagnus angustifolia or E. orientalis and in rushes, while in summer and fall they stay in the cotton

fields, legume crops, and stubble. In the past few years the pheasants have begun to stay the year round in 3- to 4-year-old forest strips of ailanthus, white poplar, mulberry, and acacia. The pheasant population is larger in forest preserves.

Kerstetter, Theodore H., Jr., Irven O. Buss, and Hans A. Went. (Wash. State Univ., Pullman.) ANTIBODY-PRODUCING FUNCTION OF THE BURSA OF FABRICIUS OF THE RING-NECKED HHEASANT. J. Exptl. Zool. 149(3): 233-237, 4 figs. on 1 pl. Apr. 1962. WR 109: 49

GROUSE, PARTRIDGE, ETC.

Blank, T. H., and J. S. Ash. FLUCTUATIONS IN A PARTRIDGE POPULATION. In: THE EXPLOITATION OF NATURAL ANIMAL POPULATIONS, 1960. Brit. Ecol. Soc. Symposium 2: 118-133, illus. 1962. [From Biol. Abstr. 41(3), 1963.] WR 109: 49

Data are presented concerning a partridge population on a 4000-acre area in West Hampshire. Variations in breeding density have been less marked than the variations which have occurred in the autumn population. Breeding density variations have been reduced by controlled shooting (density-dependent predation), and emphasized by changes in crop distribution. Age (except indirectly through sex-ratios) has had little effect on breeding pair density. Autumn populations have shown marked fluctuations, and are primarily dependent on the weather during June and July. In most years the weather produces a relatively low survival rate. High survival rates occur only when the weather in June and July is dry and sunny, and where the crop distribution is suitable. Crop distributions that encourage a high breeding density are often inimical to chick survival. The effects of disease, predation and the density of the breeding population itself, although not accurately known, are considered to have had only minor effects on the fluctuations recorded in September.--Authors.

Cottam, Clarence. (Welder Wildl. Foundation, Sinton, Texas.) IS THE ATTWATER PRAIRIE CHICKEN DOOMED? Audubon Magazine 64(6): 328-330, 1 fig. Nov.-Dec. 1962. WR 109: 49

In peak years before 1900, there were probably more than a million Attwater prairie chickens in Texas. By 1937 the population was reduced to approximately 8,700 birds. In 1960 a survey revealed that "just a few hundred birds" remained. In 1937 the birds were found in 21 counties and in 1960 in only 11. The author recommends that at least 2 areas, each containing at least 10,000 acres, are needed to assure perpetuation of this species. The refuges should contain bluestem prairie land with adjacent bodies of water in coastal Texas.

Helminen, Matti, and Juha Viramo. (Game Res. Inst., Helsinki, Finland.) ANIMAL FOOD OF CAPERCAILLIE (TETRAO UROGALLUS) AND BLACK GROUSE (LYRURUS TETRIX) IN AUTUMN. Ornis Fennica 39(1): 1-12. 1962. [From Biol. Abstr. 40(3), 1962.] WR 109: 49

This study is based on analyses of 651 crop samples of capercaillie and 831 samples of black grouse. Samples were collected from different parts of Finland in Sept., Oct. and Nov. of the years 1956-1960. The sex and age class of each individual was determined by examination of the left wing. Altogether 158 crops (10.7%) were observed to contain animal matter. There was no significant difference between the species. Females of black grouse were found to utilize animal food more frequently than capercaillie or males of black grouse. The amount of animal food per crop was very small (percentage weight about 1). The trend towards decreasing consumption of animal food was shown by both age classes from early Sept. to Nov.

Jenkins, David, and Adam Watson. (Marischal Coll., Aberdeen, Scotland.) FLUCTUATIONS IN A RED GROUSE (LAGOPUS SCOTICUS (LATHAM)) POPULATION, 1956-9. In: THE EXPLOITATION OF NATURAL ANIMAL POPULATIONS, 1960. Brit. Ecol. Soc. Symposium 2: 96-117, illus. 1962. [From Biol. Abstr. 41(3), 1963.] WR 109: 50

A long-term program of research into the population dynamics of red grouse is being organized in north-east Scotland. This paper is a preliminary report on the methods used and the results obtained in the first 3 years. The work described is an intensive study of the birds on 418 ha (1135 acres) of moorland at 210-270 m (700-900 ft) elevation in Glen Esk, Angus, with particular reference to changes in numbers during autumn and winter. Total counts, using dogs to scent and flush grouse as the observer walks standard areas, show that grouse have declined in numbers from the beginning of the study in 1956 to a low level in early 1960. Decreases have occurred each winter through well-marked stages of loss (37-50% and 24-43%), separated by periods of 1 to 3 months during which numbers have stayed level. Marking of individuals and discovery of corpses have shown that during these periods of stable numbers there have been changes in the individual membership of the populations, those that died or emigrated having been replaced by incomers from elsewhere. Thus the population density has presumably been maintained level by some active process regulated through the behavior of the grouse themselves. Efficient exploitation depends on prediction of the levels at which the grouse will stabilize their numbers at the end of the shooting season.--Authors.

Rosenberg, Erik, and P. O. Swanberg. DISPLAY OF THE BLACK COCK (LYRURUS TETRIX). Vår Fågelvärld 20. 6 pls. 1961. [From review by Louise de K. Lawrence, Bird-Banding 33(1), 1962.] WR 109: 50

A series of photographs with descriptive captions. The role of the hen is chiefly to stroll into the constricted display area of the male. In full display he woos her by turning around "carousel-like" to the accompaniment of a loud cooing chorus from all cocks present. There, for the time being, the contact between the sexes ends and the hen walks away from the site. Mating is a strictly private affair.

Rykovskii, A. [THE CAUSES OF A DECREASE IN THE SIZE OF THE BLACK GROUSE POPULATION.] Okhota i Okhotn. Khoz. 4: 19-21. 1961. [From Biol. Abstr. 41(3), 1963, from Referat. Zhur., Biol., 1962, no. 6I211.] WR 109: 50

Translation [from Russian abstract]. Experiments carried out in 1958 at the Pereslavskoe Foresting Hunting Farm showed that when 2 broods of 5 and 6 nestlings each were alarmed daily for 5-6 days, not one of them remained; among control broods 18-30% were left after their departure in 25-30 days. When haying is early, the broods in typical grouse habitats of sparse undergrowth with thick grass in glades sustain more losses and the nestlings weigh less than in atypical stations where there is no haying (abundant undergrowth, patches of heath, mossy bogs). When haying is late, on the other hand, the broods in typical stations are in a better position. Hunting at mating time has practically no effect on the reproduction of the grouse.

TURKEY

Glazener, W. C. (Welder Wildl. Foundation, Sinton, Texas.) WILD TURKEY IN TEXAS / RESTORATION PROGRESS. Texas Game & Fish 21(1): 8-10, 27. Jan. 1963. WR 109: 50

Only live-trapped native turkeys were used in the turkey restoration program of Texas. A total of 8,629 were transplanted during the period 1938-61. Cost records over a period of 12 years showed that the transplanting program involved 3,040 birds at a cost of $9.94 per bird. Successful transplants were restricted largely to a belt in which the mean annual rainfall ranged roughly from 20-30 inches. The birds were moved from the western to the eastern part of the state where a huntable population has not yet been firmly established.

Glazener, W. C. (Welder Wildl. Foundation, Sinton, Texas.) AN EXAMPLE OF WILD TURKEY RESTORATION. Texas Game & Fish 21(2): 22-24, 27, illus. Feb. 1963. WR 109: 51

During 1940-3, releases of 180 wild turkeys were made on an area of 44,924 acres in Bee and Goliath counties (Texas). By July 1944, the population estimate was 1,500 turkeys; the current population is estimated at 5,000-8,000.

Hoffman, Donald M. (Box 307, Laveta, Colo.) THE WILD TURKEY IN EASTERN COLORADO / A RESEARCH AND MANAGEMENT STUDY OF MERRIAM'S WILD TURKEY IN EASTERN COLORADO. Colo. Game & Fish Dept. Tech. Publ. no. 12. 49 p., 36 figs. July 1962. WR 109: 51

A report covering 9 years of research aimed at determining the basic requirements of the wild turkey and means to increase existing populations in Colo. Food studies receive emphasis, and there are 12 pages containing tables resulting from these studies. Hunting the turkey in Colo. was resumed in 1949. Harvest has been low, but current information indicates that the turkey may be able to withstand much greater hunting pressure.

Wehr, Everett E. STUDIES ON LEUCOCYTOZOONOSIS OF TURKEYS, WITH NOTES ON SCHIZOGONY, TRANSMISSION, AND CONTROL OF LEUCOCYTOZOON SMITHII. Avian Diseases 6(2): 195-210. May 1962. WR 109: 51

The asexual or schizogonous development of the parasite were studied in smears and sections of domestic turkeys infected experimentally and naturally. Schizonts were found in liver tissue only, which is designated as hepatic schizonts. The megaloschizont stage, present in L. simondi of ducks, was not seen. The author describes fairly well a series of stages in the development of the schizont.--Courtesy/ Louis N. Locke.

DOVES AND PIGEONS

Couch, Andrew B., Jr., B. Grabstald, and Kenneth J. Kimbrough. (Southern Methodist Univ., Dallas, Texas.) A SEARCH FOR TRYPANOSOMES IN MOURNING DOVES. J. Grad. Res. Center 30(1): 44. 1962. [From Biol. Abstr. 39(5), 1962.] WR 109: 51

Farmer, John N. (Univ. Mo., Columbia.) RELAPSE OF HAEMOPROTEUS SACHAROVI INFECTIONS IN MOURNING DOVES. Trans. 27th. N. Am. Wildl. Conf. p. 164-174. 1 fig. 1962. WR 109: 51

The reappearance of young gametocytes of H. sacharovi in the blood of infected doves after gametocytes apparently disappeared from the peripheral circulation is attributed to a relapse phenomenon. Experimental evidence indicates that relapses of infection of H. sacharovi in mourning doves are of common occurrence. Furthermore, mourning doves which are apparently parasite-free may nonetheless be subject to relapse even though reinfection by possible intermediate hosts is unlikely. Experimental evidence indicates a lack of periodicity in the reappearance of gametocytes. Variation in the frequency of relapse from bird to bird was also recorded. Since the mourning doves were maintained under uniform conditions of light, food, water and temperature, some other factors, apparently, are responsible for one bird to experience more relapses than another. Complete measurements of micro- and macrogametocytes from infected doves indicate a distinct hypertrophy of infected erythrocytes.--From summ.

Harris, Stanley W., Marius A. Morse, and William H. Longley. (Humboldt State Coll., Arcata, Calif.) NESTING AND PRODUCTION OF THE MOURNING DOVE IN MINNESOTA. Am. Midland Nat. 69(1): 150-172, 4 figs. Jan. 1963. WR 109: 51

Nesting extended from early Apr. to early Oct. with a peak in June. Factors appearing to affect selection of the nesting site were: density of cover, availability of horizontal limbs or crotches, proximity to tall perch sites,

and proximity to an open view and flight path. Spruce shelterbelts were the most used nesting habitats. The average interval between successful completion of nesting and renesting was 5.5 days; the average interval between premature termination of nesting and renesting was 9.8 days. Fledgling rates for nestings completed prior to 31 July varied between 38% and 51%, while rates for later nests ranged from 78% to 85%. Of all eggs laid, 37.3% were lost before hatching; hatched young were lost from 9.2%. Minn. doves averaged about 3 nesting attempts per year, and 3.2 to 4.0 young were fledged per pair. Between 16% and 27% of young fledged left the nest after 1 Sept. and 10% to 17% after 10 Sept. In a high concentration area, 38 to 65 young were fledged per acre of woody cover.--From auth. abstr.

Oberheu, John C., and W. D. Klimstra. (N. C. Wildl. Resources Comm., Raleigh.) LATE SUMMER AND EARLY FALL FOODS OF THE MOURNING DOVE IN ILLINOIS. Trans. Ill. State Acad. Sci. 54(3/4): 115-129. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962.] WR 109: 52

Analyses were made of 1142 crops from Zenaidura macrocura collected in central and southern Ill. during Sept., 1948-1955. Animal material composes 0.07%, grit 0.04%, plant seeds 99.89% of total food volume. Grasses yielded 87.0% and spurges 10.4% of volume; cultivated spp. provided 62%. Conclusive correlations with soil types and crop production could not be established. Food utilization reflected availability. There appeared to be a difference in preferences of adults and young birds.--Author.

Peeters, Hans J. (Museum Vertebrate Zool., Berkeley, Calif.) NUPTIAL BEHAVIOR OF THE BAND-TAILED PIGEON IN THE SAN FRANCISCO BAY AREA. Condor 64 (6): 445-470, 8 figs. Nov. 1962. WR 109: 52

In addition to nuptial behavior, this paper gives useful information on foods, feeding, and movements of the band-tailed pigeon (Columba fasciata).

WATERFOWL

Anan'in, B. D. [MODIFICATIONS IN THE FLIGHTS OF BIRDS FROM THE PREDURAL' IN RELATION TO THE ESTABLISHMENT OF A WATER RESERVOIR ON THE KAMA.] Zapiski Permsk. Otdel. Geogr. Obshch. SSSR 1: 115-127. 1960. [From Biol. Abstr. 40 (5), 1962, from Referat. Zhur., Biol., 1961, no. 5D598.] WR 109: 52

Translation [from Russian abstract]. A noticeable reduction in flights of divers in Predural' was observed over the last 2 to 3 decades. This is related to the intensive development of industry and transportation facilities in the area. Population of migratory divers and coastal birds increased sharply once again due to establishment of the Permskoe reservoir on Kama in 1954. A particularly high increase of duck population took place in 1955. Anas platyrhynchos, A. circia and A. acuta were most numerous.

Andrievskii, I. [ON THE DYNAMICS OF COLONIES OF WILD DUCKS (ANAS PLATYRHYNCHOS) IN ASKANIYA-NOVA.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 13-19. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1962, no. 3D570.] WR 109: 52

Translation [from Russian abstract]. Estimates of ducks wintering in Askaniya-Nova (Ukraine) from 1893-1957 are presented. The number of ducks wintering there increased for 20 years (until 1915). Thereafter annual nesting ranged from 70 to 120 ducks. Banding of ducks from Jan. to Mar. gave 58% recovery, banding in summer and autumn 14-28%. It is obvious that ducks tend to remain for nesting after wintering in Askaniya-Nova. Dynamics of population is marked by an almost complete change 3-4 years after banding, chiefly at the expense of young of local ducks.

Bakutin, M. G. [DIVING BIRDS OF THE SELENGA RIVER (ANSERIFORMES).] Uchenye Zap. Buryat. Gosudarst. Pedagog. Inst. 12: 19-61. 1957. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 5D607.] WR 109: 53

Translation [from Russian abstract]. Ornithological studies in Baikal and the basin of the Selenga River are treated historically. Characteristics of physical geography of Selenga River delta are listed in relation to habitation conditions of divers. Data are given on the ecology of 30 species. A brief classification is included for 15 basic species of feed conservation plants.

Chura, Nicholas James. FOOD AVAILABILITY AND SELECTIVE UTILIZATION BY JUVENILE MALLARDS (ANAS PLATYRHYNCHOS PLATYRHYNCHOS L.) ON THE BEAR RIVER MIGRATORY BIRD REFUGE, UTAH. Ph.D. thesis, Utah State Univ. 133 p. 1962. [From abstr. in Dissertation Abstr. 23(7), 1963.] WR 109: 53

Mallard ducklings in captivity used 2.5 g of food for each gram gained in body weight. Wild-collected ♂♂ weighed more than ♀♀ of same age class. Downy young mallards consumed terrestrial invertebrates almost exclusively; terrestrial invertebrates were displaced by plant material and aquatic invertebrates in older juveniles. Feeding activities of juveniles appeared to be independent of maternal influence, except for the adult leading her brood to feeding places. Downy young mallards fed primarily on insects on the water surface or ground, and they did not dive for food. Tip-up feeding was unusual before reaching the partly-feathered stage, and diet of young was different from that of the mother until the young were fully feathered.

Cringan, A. T., J. Hugh Palmer, and R. E. Mason. (Ontario Agr. Coll., Guelph, Canada.) SOME EFFECTS OF A HEADWATER IMPOUNDMENT UPON WATERFOWL. Trans. 27th N. Am. Wildl. Conf. p. 80-91, 1 fig. 1962. WR 109: 53

Luther Marsh, established in 1952, is an impoundment of 4,500 acres, in southern Ontario. Maximum number of waterfowl using impoundment reaches 15,000 to 25,000. Estimated nesting population of ducks increased from a few prior to flooding to 464 (basis: sample plots) or 700 (basis: general reconnaissance) in 1961. Several species have pioneered, including gadwall, redhead, ring-necked duck and ruddy duck. Trapping studies show that the fall concentration of ducks at Luther Marsh is made up of both local and non-local birds. Hunting has increased from about 300 hours annually prior to impoundment to between 15,000 and 25,000 hours per year in 1960 and 1961. Estimated total kill in 1961 was 3,355 ducks.--A. T. Cringan.

Galbreath, Donald S. (600 N. Capitol Way, Olympia, Wash.) WATER FOWL POPULATION INCREASE IN THE COLUMBIA BASIN OF CENTRAL WASHINGTON. [Wash.] Game Bull. 14(3): 6-7. July-Sept. 1962. WR 109: 53

An irrigation project under the direction of the U. S. Bureau of Reclamation has brought water to 440,000 acres that were arid before 1952. Counts of waterfowl, made chiefly on the ground, indicated an increase of 445% during migration. State-wide counts at the same time indicated an increase of 132%. In 1954, hunters bagged about 55,000 ducks in the Columbia Basin counties; in 1961 they bagged 156,290. Shooting restrictions were more stringent in 1961 than in 1954.

Hansen, Henry A. (Box 2021, Juneau, Alaska.) CANADA GEESE OF COASTAL ALASKA. Trans. 27th N. Am. Wildl. Conf. p. 301-320, 3 figs. 1962. WR 109: 53

The migration, mortality, and management implications for two coastal races of Canada geese nesting in Alaska are described. Basic to the study are 1,129 recoveries from 3,943 Branta canadensis occidentalis banded on the Copper River Delta between 1951 and 1960 and 164 recoveries from 3,593 B. c. fulva banded in and near Glacier Bay between 1956 and 1960. B. c. fulva, a sedentary race wintering near its breeding area in southeastern Alaska, is very lightly hunted and requires no special attention at this time. B. c. occidentalis winters in the Willamette Valley of Oreg. and is heavily harvested, particularly late in the season. The primary management measure recommended is to terminate hunting Canada geese in five counties of the Willamette Valley soon after Christmas of every year. In conjunction with an early hunting closure, establishment of well-dispersed food patches might also be worth considering as a management practice.--From auth. abstr.

Harmon, Bobby G. (La. Wild Life & Fisheries Comm., Grand Chenier.) MOLLUSKS AS FOOD OF LESSER SCAUP ALONG THE LOUISIANA COAST. Trans. 27th N. Am. Wildl. Conf. p. 132-138. 1962. WR 109: 54

Thirty-two lesser scaup were collected in the Gulf of Mexico 3-4 miles from shore, and their food was 99.8% surf clams (Mulinia lateralis). Bottom samples indicated that there was 13.23 pounds of marine organisms per acre in first 1.5 miles from shore, and in the zone 2-4 miles from shore there was an average of 147.85 pounds per acre. In the zone nearer shore 36.5% of the organisms were Mulinia lateralis and in the zone more distant from shore 85.2% were that species.

Hunt, Richard A., J. G. Bell, and L. R. Jahn. (Wis. Conserv. Dept., Box D, Horicon.) MANAGED GOOSE HUNTING AT HORICON MARSH. Trans. 27th N. Am. Wildl. Conf. p. 91-106. 1962. WR 109: 54

Canada goose populations increased during 1949-61 from 12,000 to 100,000. By 1952, 60% of the hunter trips and 32% of the kill occurred along roads and railroad tracks. Hunters averaged 6.5 trips per year, 2 hours per trip, 0.08 geese per trip, and fired 27 shots per goose bagged. In 1953 a managed hunting unit was established on the periphery of the federal refuge. During 1953-59 the managed unit accounted for 46.1% of the hunter trips. During 1958-61 hunters in the managed unit averaged 0.52 geese per trip. Regulations evaluated in the managed unit included: (1) season bag limit of 2 Canada geese (1953-55), (2) season limit of 3 trips per hunter, (3) mail-type reservation system, and (4) restricting the daily bag limit to 1 goose of any species (1960-61). Regulations established on private lands included: (1) prohibiting hunting on road and railroad tracks, (2) moving blinds 75 yards back from the refuge boundary, and (3) requiring a 200-yard spacing of blinds. Two regulations effective in increasing the harvest in the years 1957-59: (1) a delayed opening to mid-October, and (2) a 2:00 p.m. daily closing in a zone surrounding the refuge. The increasing kill at Horicon Marsh resulted in the development of a harvest quota system for the Mississippi Valley Canada goose population.--Richard A. Hunt.

Jemison, Ernest S., and Robert H. Chabreck. (Lake Arthur, La.) THE AVAILABILITY OF WATERFOWL FOODS IN COASTAL MARSH IMPOUNDMENTS IN LOUISIANA. Trans. 27th N. Am. Wildl. Conf. p. 288-300. 1962. WR 109: 54

The purpose of the study was to determine the amount of food available to waterfowl throughout the wintering season. Forty marsh floor samples were collected periodically from two impoundments on Rockefeller Wildlife Refuge in southwestern Louisiana. Sampling periods were October and December, 1959 and March, 1960. Analysis of the samples showed that sawgrass (Cladium jamaicense), bullwhip (Scirpus californicus), cyperus (Cyperus sp.), millet (Echinochloa walteri), dodder (Cuscuta sp.) and widgeongrass (Ruppia maritima) were present in sufficient quantities to be of major importance as waterfowl food. Sawgrass and bullwhip seeds occurred in much larger amounts than did other species, averaging 283.8 and 238.9 pounds per acre, respectively. However, neither species has occurred in dense stands in the area in recent years. More than 70% of the seeds of major species occurred within the top 4 inches of the soil; however, all species of major importance were found as deep as 10 inches. Little relationship was shown between the vegetative stand composition of the areas at the time of sampling and the seeds that were available in the soil. Widgeongrass and dwarf spike-rush vegetation showed a progressive decrease throughout the winter. The decrease was attributed primarily to waterfowl usage.--Ernest S. Jemison.

Junca, H. A., E. A. Epps, and L. L. Glasgow. (La. State Univ., Baton Rouge.) A QUANTITATIVE STUDY OF THE NUTRIENT CONTENT OF FOOD REMOVED FROM THE CROPS OF WILD MALLARDS IN LOUISIANA. Trans. 27th N. Am. Wildl. Conf. p. 114-121. 1962. WR 109: 54

Crop contents were quantitatively analyzed from 215 mallards shot in southwest Louisiana during the 1960-61 winter. Grass seed made up more than 80% of the crop contents. Proximate analyses revealed that the crop contents had the following percentages: protein 14.8, fat 2.9, fiber 14.7, NFE 52.4, ash 14.5, calcium 1.19 and phosphorus 0.498.--Leslie L. Glasgow.

Larionov, V. F. [THE RELATIONSHIP OF ARRIVAL DATES TO THE PROPAGATION OF ANAS PLATYRHYNCHOS.] Ornitologiya (Moscow) 2: 32-34. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D608.] WR 109: 55

Translation [from Russian abstract]. It was determined on the basis of comparisons of arrival dates and propagation data on A. platyrhynchos that these are interrelated and influenced by peculiarities of habitat conditions. In the southern zone of USSR, where A. platrhynchos arrives in March, interval between arrival and inception of propagation is 50 days; in central zone (April arrival) it is 20 days; in the northern zone (arrival in beginning of May) it is 10 days.

McLain, Paul D., and Frederick Ferrigno. (N. J. Div. Fish & Game, Trenton.) SEVEN YEARS OF DUCK BANDING IN NEW JERSEY. N. J. Outdoors 13(7): 4-19, illus. Jan. 1963. WR 109: 55

This is a report on the duck banding program in N. J. in which 11,584 ducks were banded, of which 6,848 were black ducks. There were 945 recoveries (8.1%). Most recoveries (65.5%) were made in N. J. Banding was done during the winter, and recoveries indicate that N. J. and other northeastern states are harvesting most of the ducks (72.4%) wintering in N. J.

Murashka, Yu., and M. Valyus. [CERTAIN DATA ON THE BIOLOGY OF ANATIDAE IN RESERVOIRS OF SUDOVSKII KRAI.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 197-200. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D615.] WR 109: 55

Translation [from Russian abstract]. Cygnus olor has nested continuously on Lake Zhal'titis since 1942. From 11 to 23 couples nested there between 1957 and 1959. Birds have nested on Lake Zhuvintas since 1937. Towards 1957, up to 47 couples of swans were counted on the lake. Principal wintering sites of swans are in SW sectors of the Baltic region. Experiments in reacclimatization of Anser cinereus are cited. Aythyra nyroca nests on Lake Zhuvintas in small numbers, not exceeding 20 to 30 couples. It has not been seen N of Nemunas River. Netta rufina population increased over recent decades. Data on other species are included.

Roe, K. Sherwood. CRISIS FOR WESTERN WATERFOWL. Am. Forests 68(8): 12-15, illus. Aug. 1962. WR 109: 55

Two local organizations, the Tule Lake Irrigation District and the Klamath Drainage District, backed by the U. S. Reclamation Department, are promoting efforts to transfer public land to private use. In the 50 years since Theodore Roosevelt established four neighboring refuges on the Calif.-Oreg. border, the original 190,000 acres have been reduced by farming and homesteading groups to 25,000. Some 8,000,000 waterfowl visit this area twice annually, and 80,000 birds are harvested by 4,000 hunters, who contribute nearly $3,000,000 to the local economy. With the present feeding and resting grounds converted into farms, the migrating waterfowl descent on the more southern rice and lettuce fields causes agricultural losses of 4-5 million dollars.

Rogers, John Patrick. THE ECOLOGICAL EFFECT OF DROUGHT ON REPRODUCTION OF THE LESSER SCAUP, AYTHYA AFFINIS (EYTON). Ph.D. thesis, Univ. Mo. 109 p. 1962. [From abstr. in Dissertation Abstr. 23(7), 1963.] WR 109: 55

On a study area in southwestern Manitoba, the lesser scaup population increased 20% in 1958 from that of 1957, decreased 63% in 1959 and decreased 29% in 1960. Water levels in nearby potholes were unusually high in 1957, declined during the following 2 years to very low levels in 1959 and increased in 1960. The number of broods observed in 1959 was 98% lower than in 1957. The most important factors in lower production were decreases in nesting effort and success. Low nesting effort was associated with incomplete ovarian development. Nesting success decreased from 50% in 1957 to an average of 6% in the next 3 years. Eighty per cent of unsuccessful nests were lost to predation. Mammals, especially skunks, destroyed most of the nests, and their depredations were more serious during low water because of greater accessibility of the nests.

Rudersdorf, Ward James. CANADA GOOSE INVESTIGATIONS IN THE VICINITY OF THE W. K. KELLOGG BIRD SANCTUARY, KALAMAZOO COUNTY, MICHIGAN. Ph.D. thesis, Mich. State Univ. 208 p. 1962. [From abstr. in Dissertation Abstr. 23(5), 1962.] WR 109: 56

Northward migration was from late March to mid-April when local birds were incubating. Band recoveries from the James Bay area were chiefly from the western shore. A larger proportion of the banded birds wintered on the Atlantic Coast in the period 1954-58 than in the period 1949-53. Data from a 3-year study indicated no difference in vulnerability between adults and juveniles. Sixty-eight pairs of geese raised 74 goslings to the first hunting season. Mortality rate of goslings was 63.4% until fall migration. A 50:50 sex ratio was observed. Blood parasites found were Leucocytozoon, Microfilaria and Haemoproteus. Ectoparasites collected were Ornitholobius, Trinoton, Menopon, and Anatacola. The average hunter spent $74.64 per season on goose hunting, each goose cost $49.42, hunters spent 40.5 hours per season, and 24 shells were fired for each bird bagged. Most farmers believed that Canada geese caused no crop damage.

Salyer, James W. (Lower Souris Natl. Wildl. Refuge, Upham, N. Dak.) EFFECTS OF DROUGHT AND LAND USE ON PRAIRIE NESTING DUCKS. Trans. 27th N. Am. Wildl. Conf. p. 69-79, 2 figs. 1962. WR 109: 56

Breeding populations tended to fluctuate with available water, but showed no distinct relationship to grazing. Nesting effort was somewhat constant for pairs finding territories. Reproductive success declined with increased predation and embryo mortality in the drought years. The size and numbers of broods decreased as the distance from nest to water increased. Diving ducks responded most dramatically to changing water levels.--From auth. abstr.

Skrobov, V. [MASS CONVERGENCE OF SWANS IN THE OBSKAYA BAY IN THE FALL OF 1959.] Okhota i Okhotnoe Khoz. 2: 59. 1960. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D613.] WR 109: 56

Translation [from Russian abstract]. A mass convergence of swans (750 birds along a 6 km sector of the coastline) was observed on Obskaya Bay from 26 Sept. to 2 Oct. 1959, in the vicinity of the settlement Syunai-Sale. Major convergence of swans on Obskaya Bay is viewed as a result of the closed hunting season of 1959 in N Obskoi regions. Furthermore, prolonged warm fall of that year and formation of muddy shoals in bay during fall promoted influx of birds. Swans departed with arrival of cold weather.

Valyus, M. I. [DATA ON THE BIOLOGY OF CYGNUS OLOR IN LITHUANIA.] Ornitologiya (Moscow) 2: 221-227. 1959. [From Biol. Abstr. 40(4), 1962, from Referat. Zhur., Biol., 1961, no. 5D614.] WR 109: 56

Translation [from Russian abstract]. Nesting of C. olor and the spread of its population over reservoirs of Lithuania are surveyed historically. On Lake Zhuvintas, there were 3 couples nesting in 1951, 6 in 1952, 14 in 1953, 23 to 24 in 1954 and 22 to 24 couples in 1955. On Lake Zhal'titis, 6 couples nested in 1958, only 4 couples during the 2 succeeding years. The swans arrive on Lake Zhuvintas at the end of March or the beginning of April. More than 3 weeks elapse between the arrival and the inception of egg laying (April 20th). The oviposition lasts 7 to 13 days, the incubation lasts from 34 to 39 or 40 days. Egg destruction in the nests comprises 30%. The dimensions and structure of the nests, size of the laying and results of ringing are discussed. The recovery of rings comprised 20% for the 87 swans ringed on these lakes. The swans winter in the area stretching from Ruegen Island in Germany to the mouth of the Seine. Their departure for that area depends on the date at which the reservoirs freeze over.

Fedosov, A. V. [THE DISTRIBUTION OF WHITE STORKS IN BRYANSK OBLAST.] Ornitologiya 2: 147-149. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 57
[In Russian.]

Karpivnyi, A. P. [THE DISTRIBUTION AND NUMBER OF STORKS IN BELORUSSIA.] Ornitologiya 2: 143-146. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D556.] WR 109: 57
Translation [from Russian abstract]. Contains information about 3399 nests as a result of data from questionnaires and author's data. Number of storks was smaller in 1957 than in 1956 in N and SE regions, but larger in SW region.

Leus, S. I. [COMPARATIVE DATA ON THE FEEDING OF HERONS IN THE VOLGA DELTA.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 151-156. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D546.] WR 109: 57
Translation [from Russian abstract]. Feeding habits of the common heron, greater egret, lesser egret, yellow heron, "Egyptian heron", and night heron. Dietary differences among species are related to different methods of catching food and corresponding morphological features.

Ling, R. G. [GULL COLONIES IN THE LAKE COUNTRY OF VOOREMAA AND THEIR POPULATION DYNAMICS OVER THE RECENT DECADES.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 161-168. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 6D354.] WR 109: 57
Translation [from Russian abstract]. Gulls no longer nest since 1957 on Lake Pupastvere, as the latter runs dry extensively. Rapid growth of population of L. r. ridibundus on Lake Soits'yavr during recent decades (from 10 couples in 1936 to 2000 couples in 1955) is explainable in terms of dissemination of this species to N, as well as by creation of favorable habitation for nesting here subsequent to drop in water level in 1929.

Nazarenko, L. F. [HERONS AS PISCIVORES IN THE LOWER REACHES OF THE DNIESTER RIVER AND THEIR PRACTICAL IMPORTANCE.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 201-203. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D545.] WR 109: 57
Translation [from Russian abstract]. On the basis of more than 500 diet samples, of field observations, and composition of helminthofauna, there is wide polyphagia by herons in Dniester River lowlands. A conspicuous piscivorous tendency was noted only in common herons and night herons. Tendency was less prominent in greater and lesser egret and especially in red heron. Yellow heron is not a natural fisheater here and showed no evidence of helminths pathogenic for fishes. During first half of summer, diet of all herons consists mostly of larvae of aquatic insects; in latter half, of frogs.

Priklonskii, S. G., and V. M. Galushin. [NEW DATA ON THE ECOLOGY OF THE BLACK STORK.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 231-236. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D554.] WR 109: 57
Translation [from Russian abstract]. Data on the development of young, call and other sounds of nestlings and adults, and feeding habits of the black stork. Recommendations are given on banding technique and conservation.

Skokova, N. N. [THE ECOLOGY AND IMPORTANCE TO COMMERCIAL FISHING OF THE SPOONBILL.] Ornitologiya 2: 262-270. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D544.] WR 109: 57
Translation [from Russian abstract]. Data on numbers of spoonbill Platalea leucorodia in Astrakhan Preserve; times of arrival, nesting, and departure; construction, dimensions, and location of nests; size of eggs and clutches; development of nestlings; and daily activities at different periods are given. Seasonal distribution of spoonbill in Volga delta (especially location of feeding places) is determined by course of spring flood and migration of young carp.

Veroman, H. KAS VALGE-TOONEKURG ON HÄVIMISOHUS? [IS THE STORK BOUND TO BECOME EXTINCT?] Eesti Loodus 2: 81-85, illus. 1961. [From Biol. Abstr. 40 (6, pt. 1), 1962.] WR 109: 58

[In Estonian] with English and Russian summaries. The first stork census in Estonia was carried out in 1939. About 320 pairs of storks nested here at that time. The international census of 1958 revealed that the number of storks nesting in Estonia had increased to 354 pairs.

Vinokurov, A. A. [THE PINK HERON IN THE SOUTHEASTERN PART OF THE AZOV FORELAND.] Ornitologiya 2: 256-261. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D548.] WR 109: 58

Translation [from Russian abstract]. According to data from aerial counts made in summers of 1953 and 1954, about 6500-70000 red herons nest in estuaries or salt lakes of Azov foreland. Data are given on the structure of the heronry, nestling mortality, movements, and feeding habits of the pink heron. Fishes, insects, and lake frogs constitute bulk of heron diet. Diet changes with locale and season. Some damage which these herons do to fish hatcheries may be reduced by destroying nearby reed thickets, their usual feeding grounds.

Voropanova, T. A. [DATA ON THE FEEDING OF SANDPIPERS IN THE VOLOGODSKAYA OBLAST'.] Uchenye Zap. Vologodsk. Gosudarst. Pedagog. Inst. 24: 141-144. 1959. [From Biol. Abstr. 41(1), 1963, from Referat. Zhur., Biol., 1961, no. 6D363.] WR 109: 58

Translation [from Russian abstract]. Results of an analysis of the content of 96 stomachs from sandpipers of 18 species.

Watson, George E. (U. S. Natl. Museum, Washington 25, D. C.) NOTES ON THE SPOTTED RAIL IN CUBA. Wilson Bull. 74(4): 349-356 + 1 pl. Dec. 1962. WR 109: 58

The spotted rail (Pardirallus maculatus) is rare in Cuba outside the Zapata Swamp, and this paper reports its presence and abundance in the province of Pinar del Rio. Information is also given on molt, breeding season, available specimens, ecology and habits, range, and taxonomy of this species.

OTHER BIRDS

Aleksandrova, I. V. [THRUSHES OF THE PRIOKSKO-TERRASNYI PRESERVE.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 3-12. 1959. [From Biol. Abstr. 40(3), 1962, from Referat. Zhur., Biol., 1961, no. 4D623.] WR 109: 58

Translation [from Russian abstract]. Among thrushes of the Preserve (which is located in Serpukhov raion of Moscow oblast) predominant spp. are Turdus ericetorum (of which 254 nests were found in 1954 and 1955), T. musicus (124 nests), and T. pilaris (99 nests). T. ericetorum prefers to nest in low spruce trees, T. musicus on ground and on rotten stumps, and T. pilaris in high pine trees, that is, in places less accessible to most thrushes. Up to 40% artificial nest supports for thrushes were noted to be in use. Diets of different spp. of thrushes are similar. During nesting period they exterminate insects present in greatest numbers, chiefly forest pests.

Baker, James K. (Carlsbad, N. Mex.) THE MANNER AND EFFICIENCY OF RAPTOR DEPREDATIONS ON BATS. Condor 64(6): 500-504. Nov. 1962. WR 109: 58

Six species of hawks, one falcon and one owl have been observed feeding on bats at Carlsbad Caverns, N. Mex. Although the great horned owl is inefficient at catching bats, it is the most serious avian predator because of its larger size, its night-feeding habits, and the fact that it is present throughout the year. An owl was observed to devour 27 bats in about one hour. The efficiency of the birds expressed as a percentage of kills versus attacks is rated as follows: falcons--90-100%, accipiters--90%, buteos--20-50%, and owls--30%.--From summ.

Bel'kovich, V. M. [AN ECOLOGICAL-MORPHOLOGICAL CHARACTERIZATION OF THE ADAPTATION TO FLIGHT OF THE GLAUCOUS GULL AND THE LONG-TAILED JAEGER.] Trudy Inst. Morphol. Zhivotnykh Akad. Nauk SSSR 32: 131-141. 1960. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 2I129.] WR 109: 59

Translation [from Russian abstract].

Belskii, N. V. [THE SPORADIC APPEARANCE OF THE HONEY BUZZARD IN MOSCOW PARKS.] Ornitologiya 2: 150-152. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962.] WR 109: 59

[In Russian.] At the end of Aug. and in Sept. 1956, there was an irruption of honey buzzards in area of Main Botanical Garden which coincided with a high rate of reproduction and settlement by wasps. From 1949 to 1955 wasps took over 3 to 6% of all birdhouses built for starlings and in 1956, up to 11%. Recommendation is made to those remodelling city to consider possibility of attracting birds to landscaped areas of Moscow.

Bëme, R. L. [WINTER FEEDING OF THE REDSTART IN THE CENTRAL CAUCASUS.] Ornitologiya (Moscow) 2: 208. 1959. [From Biol. Abstr. 40(3), 1962, from Referat. Zhur., Biol., 1961, no. 4D638.] WR 109: 59

Translation [from Russian abstract]. Analyses were made of gastric contents of about 20 redstarts wintering in Terek and Gizel'don river valleys in Nov. and Dec. 1955 and Feb. and Nov. 1957. In winter, birds eat not only soft parts of sea buckthorn berries, but their seeds as well. Gastric contents included also small stones (2.5 mm in diameter) by which hard seeds were ground up.

Budd, G. M. (Dept. External Affairs, Melbourne, Australia.) POPULATION STUDIES IN ROOKERIES OF THE EMPEROR PENGUIN APTENODYTES FORSTERI. Proc. Zool. Soc. London 139(3): 265-288, 1 fig., 1 pl. Oct. 1962. WR 109: 59

The world population of emperor penguins was estimated to be at least 120,000 pairs in 21 rookeries. Breeding failure is high, and population remains stable despite capability of rapid increase.--From auth. abstr.

Farb, Peter. WOODPECKERS ARE REMARKABLE. Am. Forests 68(8): 32-35, illus. Aug. 1962. WR 109: 59

This popular article gives much information on woodpeckers. In an effort to discourage woodpeckers from drilling holes into telephone poles, poles have been painted various colors. The painted poles received more damage than those not painted. The wire mesh, metal flashers, burlap wrappings, mounted owls, false snakes, and 100 chemicals tested all proved ineffective deterrents to woodpecker damage.

Gavrilov, E. I., and A. N. Zaleski. [THE FOOD OF KESTRELS AND MERLINS IN THE FOREST-STEPPE PART OF THE CENTRAL CHERNOZEM REGION.] Zool. Zhur. 40(6): 882-887. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 2I164.] WR 109: 59

Translation [from Russian abstract]. Original with English summary. In 1954 and 1955, 15 pairs of kestrels and 25 pairs of merlins nested in a forest-steppe area of 50 km^2, more than half of which consisted of fields, in Gremyachinskii raion of Voronezh oblast. Both types of falcons selectively caught common field mice on the slopes of gullies, on abandoned fields, and in forest strips. Field mice made up 76.3% of the dietary spectrum of the kestrel and 59.2% of that of the merlin, while field mice made up only 6.7% of the rodent catches of other birds in the same area. When the number of field mice decreased in 1955, the kestrels went over to feeding on susliks and lizards and retained the same parameters of reproduction as in the previous year. However, the consumption of vertebrates by merlins decreased to 1/3 of its former extent: this led to a decrease in its reproduction rate (7.1% unfertilized eggs, 19.2% mortality among the young hatched, and a decrease in the average number of hatchlings in the nest from 3.5 in 1954 to 2.4 in 1955.

Graber, Richard R. (Ill. Nat. Hist. Surv., Urbana.) FOOD AND OXYGEN CONSUMPTION IN THREE SPECIES OF OWLS (STRIGIDAE). Condor 64(6): 473-487, 1 fig. Nov. 1962. WR 109: 60

Saw-whet owls had higher metabolic rates than long- and short-eared owls. Peaks in oxygen consumption of all species occurred between 10:00 p.m. and 2:00 a.m.; low points occurred between noon and 2:00 p.m.

Green, Janet C. (1923 Greysolon Rd., Duluth 12, Minn.) 1962 FALL HAWK MIGRATION, DULUTH. Flicker 34(4): 121, 124-125. Dec. 1962. WR 109: 60

A total of 172.5 hours was spent counting migrating hawks from 8 Sept. to 7 Nov. 1962, and 26,726 birds of 14 spp. were observed. The most abundant species was the broadwinged hawk, with a total of 20,604.

Hunter, William F., and Paul H. Baldwin. (Chelsea High School, Chelsea, Mich.) NESTING OF THE BLACK SWIFT IN MONTANA. Wilson Bull. 74(4): 409-416, 1 fig. Dec. 1962. WR 109: 60

Nesting failures appear to be common in the black swift.

Korostin, G. [PTEROCLES ALCHATA IN KAZAKHSTAN.] Okhota & Okhotn. Khoz. 1: 22. 1959. [From Biol. Abstr. 40(5), 1962, from Referat. Zhur., Biol., 1961, no. 3D574.] WR 109: 60

Translation [from Russian abstract]. Pterocles alchata usually nests in semi-arid regions and lays eggs twice in the summer. Pterocles first hatch the first half of July, and then frequent bodies of water in flocks in morning and evening. From the beginning of Aug., before flying away, the birds gather in large flocks. Presently the number of Pterocles is being reduced because of rapacious methods of hunting (in high water). It is necessary to preserve this species.

Linkola, Pentti. ZUR KENNTNIS DER WANDERUNGEN FINNISCHER MEISENVOGEL. [THE UNDERSTANDING OF THE MIGRATION OF FINLAND'S TITMICE.] Ornis Fennica 38(3/4): 127-145. 1961. [From Biol. Abstr. 40(4), 1962.] WR 109: 60

[In German.]

McCamey, B. Franklin, Jr. SURVIVAL AND AGE STRUCTURE IN A SAMPLE POPULATION OF THE BLACK-CAPPED CHICKADEE. Ph.D. thesis, Univ. Conn. 125 p. 1962. [From abstr. in Dissertation Abstr. 23(5), 1962.] WR 109: 60

At 37 stations on an area of 5 square miles in Conn., 2,000 black-capped chickadees (Parus atricapillus) were banded. More than half of these were color-banded. Breeding territories were found for 84% of the wintering adults at distances averaging 900 feet from the most used winter feeding station. Only 3% of the banded birds were retrapped at distances greater than 2,000 feet from the center of their winter ranges. In a sample of 281 birds, the mortality rate was 51% and the life expectancy 2.19-2.29 years. Fifty breeding pairs annually produced 48.5 young surviving until their first January. Birds nested at an average distance of 3,400 feet from their hatching places. It appeared that 54% of the mortality of adults occurred in summer (chiefly during July and August).

Morris, Steven. THEY'RE KILLING OFF THE EAGLE. Am. Forests 68(8): 5, 51-52, illus. Aug. 1962. WR 109: 60

One hunter in Texas claimed to have shot 25 eagles in one day, 1,000 in a single winter and 12,000 in twenty years. The birds were shot from airplanes.

Priezzhev, G. P. [SOME FEATURES OF THE COMPOSITION OF THE SMALL PASSERINE FAUNA OF THE VOLGA AND KAMA LOWLAND IN THE ZONE WHERE THE KUYBYSHEV RESERVOIR WAS FORMED.] Uchenie Zapiski Kazan, Gosudarst. Univ. 118(1): 91-110. 1958. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D504.] WR 109: 60

[Translation from Russian abstract.] Composition of bird fauna is determined by lowland conditions (annual flooding, heterogeneous microclimate, mosaic of

vegetation). Time of nesting on elevated and low-lying meadows differed by 15-20 days depending on flooding. In 1957, as a result of formation of lake at Kuybyshev which destroyed nesting places, birds congregated on shores but chiefly on remaining islands. Large numbers of passerines made it easier for predatory birds to see passerine nests and led to almost complete extinction of passerines. Destruction of all nests of crows and magpies and shooting all adults is recommended.

Prokog'ev, M. A. [THE FIRST ATTEMPT TO ACCLIMATIZE STARLINGS IN THE BURYAT AUTONOMOUS SOVIET SOCIALIST REPUBLIC.] Okhrana Prirody i Ozelenenie (Moscow) 2: 114-118. 1960. [From Biol. Abstr. 40(2), 1962, from Referat. Zhur., Biol., 1961, no. 4D654.] WR 109: 61

Translation [from Russian abstract]. There are no starlings in the Ulan-Ude region. Fifty-eight older fledglings were imported via airplane from Krasnoyarsk in June, 1954. A part of the fledglings were kept in a barn and another part were placed in nests of the "blue magpie" (Pica sp.) and Passer montanus. They were accepted only by those individual birds which had finished laying eggs. However, the male of the "blue magpie" fed only 2 starlings, whereas the P. montanus male could not keep even one fed. Many fledglings die of epizootic. The starlings were observed in the fall of 1954 and in the spring from 1955 to 1957. In 1955 they were nesting, but were not observed to do so in 1956 or 1957.

Southern, William E. (Northern Ill. Univ., DeKalb.) DISTRIBUTION OF THE BLUE-WINGED AND GOLDEN-WINGED WARBLERS IN WISCONSIN. Passenger Pigeon 24(2): 35-43, 3 figs. Apr.-June 1962. WR 109: 61

These two warblers have markedly extended their ranges northward in Wis. during the 20th century, particularly during the past 10-20 years.

Sprunt, Alexander IV. (Natl. Audubon Soc., 1130 5th Ave., New York 28, N. Y.) BALD EAGLES AREN'T PRODUCING ENOUGH YOUNG. Audubon Magazine 65(1): 32-35, illus. Jan.-Feb. 1963. WR 109: 61

A survey indicated a total of 3,807 bald eagles present Jan. 1962 in contiguous U. S. This was an increase of 165 birds over a similar count made in 1961. The increase may have resulted from better coverage of the area rather than from an increase in the number of existing eagles. The 3,807 included 2,800 adults, 870 immatures and 137 unaged birds. Only 44% of 368 nests under special observation produced young in 1962.

Stirling, D., and R. Y. Edwards. (Dept. Recreation & Conserv., Victoria, B. C., Canada.) NOTES ON THE SKYLARK ON VANCOUVER ISLAND. Canadian Field-Nat. 76(3): 147-152, 2 figs. July-Sept. 1962. WR 109: 61

Skylarks, introduced to Vancouver Island in 1903 and 1913, inhabit a small area of less than 20,000 acres in a climatic region of low snowfall. In Mar. 1962, the total skylark population was estimated to be 1000 based on a count of 694 birds. Cold winters with persistent snow reduce the population, and brief snowy periods concentrate the birds. The growth of the city of Victoria will restrict skylark habitat, and reduce the total population.--From auth. summ.

Teplov, V. P. [ACTIVITIES OF THE OKSKAYA ORNITHOLOGICAL STATION.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 291-293. 1959. [From Biol. Abstr. 40 (5), 1962, from Referat. Zhur., Biol., 1961, no. 5D544.] WR 109: 61

Translation [from Russian abstract]. Major segments of activities of the station are summarized. Studies were conducted from 1953 to 1957 on ecology of various species of ducks, accipiters, Ciconia nigra, Sterna fuscata, Scolopax major, hollow-nesting birds and Corvus cornix. Observations of bird migration at various points were organized, as well as large scale banding. A total of 150 flocks were attracted for the banding project. Banding expeditions were carried out into Lake Chany region, Kubanskie plavni and other areas. Measures were adopted to protect colonies of Ardea cinerea (Ryazanskaya oblast) and colonies of Larus melanocephalus in Ivanovskaya oblast.

Turov, I. S. [DATA ON THE NUTRITION OF THE BLACK KITE (MILVUS KORSCHUN GM.) IN CENTRAL T'IEN-SHANG.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(3): 147-148. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 5I144.] WR 109: 62

Translation [from Russian abstract]. Analysis of food remains collected in summer of 1957 from a nest with a single nestling showed that 64.2% of take consisted of mammals (mostly grey marmot, then Lepus tolai), 26.2% of birds (chiefly young gulls), and 9.6% of carrion. Information is given on numbers and distribution of various species of animals consumed by kite.

Yakobi, V. I. [THE NESTING OF HAWKS IN RELATION TO THEIR FLIGHT CHARACTERISTICS.] Proc. 3rd Baltic Ornithol. Conf., 1957. p. 339-346. 1959. [From Biol. Abstr. 40(6, pt. 1), 1962, from Referat. Zhur., Biol., 1961, no. 2D559.] WR 109: 62

Translation [from Russian abstract]. Siting of hawks' nests is related to flight adaptation in forests or open areas, to size of bird, nature of takeoff and landing at nest. Hawks which find their food in forests nest in lower part of crown. Nests of hawks which only nest (but do not feed) in the forest are located at tree tops. Treetop nesting is especially characteristic of larger predators (eagle, vulture) because of larger wings. On tundra, steppe, and desert plains hawk nests are usually associated with elevated points in relief which make takeoff and landing easier. Harriers are a genus with narrow specialization which do not nest in trees or high places. Their evolution evidently proceeded from nesting in forests to nesting in open places along with their transition from forest to steppe forms and from wing-beating flight in forest to soaring flight above open spaces. Nesting in niches in cliffs and mountain precipices makes for favorable takeoff and landing conditions for large hawks.

REPTILES AND AMPHIBIANS

Alcala, Angel C. (Silliman Univ., Dumaguete City, Philippine Islands.) BREEDING BEHAVIOR AND EARLY DEVELOPMENT OF FROGS OF NEGROS, PHILIPPINE ISLANDS. Copeia 1962(4): 679-726, 21 figs. Dec. 1962. WR 109: 62

The life histories of 11 Philippine frogs are discussed.

Berry, P. Y., and J. A. Bullock. (Univ. Malaya, Kuala Lumpur, Malaya.) THE FOOD OF THE COMMON MALAYAN TOAD, BUFO MELANOSTICTUS SCHNEIDER. Copeia 1962(4): 736-741. Dec. 1962. WR 109: 62

Insects were the chief gut contents of 160 specimens. There was more vegetable material than was expected to result from accidental ingestion, but the inorganic material was assumed to have been taken accidentally.

Heckrotte, Carlton. (La. State Univ., New Orleans 22.) THE EFFECT OF THE ENVIRONMENTAL FACTORS IN THE LOCOMOTORY ACTIVITY OF THE PLAINS GARTER SNAKE (THAMNOPHIS RADIX RADIX). Animal Behaviour 10(3&4): 193-207, 16 figs. July-Oct. 1962. WR 109: 62

Crawling activity of snakes was automatically recorded when the snakes were confined in a circular wire cage 11.5 inches in diameter. An increase in both temperature and humidity was accompanied with an increase in activity, the increase in activity being greater in response to temperature than humidity changes. There was a diphasic daily cycle of activity at 27.7 C, but the daily cycle was monophasic at 21.1 C, 24.4 C, 31.1 C, and 35.0 C at lower temperatures, maximum activity was in the middle of the day, and at higher temperatures maximum activity was in the morning. In the diphasic cycle, maximum activity was in the morning and evening.

Kiesewalter, J., K.-D. Rudat, and G. Seidel. (Univ. Rostock, Germany.) SALMONELLEN AUS REPTILIEN. I. MITTEILUNG: UNTERSUCHUNGEN AN SCHILDKRÖTEN. [SALMONELLA STRAINS ISOLATED FROM REPTILES. 1ST: COMMUNICATION: EXAMINATION OF TORTOISES.] Zentralbl. Bakt. Parasitenk. Infektionskrankh. & Hyg. 180(4): 503-509. 1960. [From Biol. Abstr. 40(5), 1962.] WR 109: 63

[In German] with English, French, Spanish and Russian summaries. Many of 365 Greek tortoises examined proved to be carriers of Salmonellae. Of 528 cloacal swabs, 193 (36.55%) contained Salmonella strains of the most different groups of the Kauffmann-White-system. Twenty-six different types could be identified, part of them being highly pathogenic for men.

Loomis, Richard B., and Robert C. Stephens. (Long Beach State Coll., Calif.) RECORDS OF SNAKES FROM JOSHUA TREE NATIONAL MONUMENT, CALIFORNIA. Bull. Southern Calif. Acad. Sci. 61(1): 29-36. 1962. [From Biol. Abstr. 39 (5), 1962.] WR 109: 63

Fifteen spp. of snakes were taken within or adjacent to the Monument, with 125 and 25 records respectively.

Martino, K. V. [QUANTITATIVE CENSUS OF THE SNAKES MALPOLON MONSPESSULANUS HERMANN IN THE WESTERN PART OF THE PRICASPIAN LOWLAND.] Zool. Zhur. 41(1): 145-147, illus. 1962. [From Biol. Abstr. 40(5), 1962.] WR 109: 63

In Russian with English summary. A new method determining the absolute number of snakes Malpolon monspessulanus Hermann based on the analysis of age-composition collections is suggested.

Rand, A. Stanley. (Harvard Univ., Cambridge, Mass.) NOTES ON HISPANIOLAN HERPETOLOGY. 5. THE NATURAL HISTORY OF THREE SYMPATRIC SPECIES OF ANOLIS. Breviora, Museum Comp. Zool. [Harvard] 154: 1-15. 1962. [From Biol. Abstr. 41 (1), 1963.] WR 109: 63

In the Dominican Republic the 3 commonest anoline lizards, Anolis distichus, A. cybotes and A. chlorocyanus, are largely sympatric and morphologically similar arboreal lizards. They differ in which part of the tree they frequent most commonly: A. distichus on the lower trunk; A. cybotes on the trunk and ground; and A. chlorocyanus on the trunk and crown of the tree. Associated with these differences in microhabitat are behavioral differences in posture, activity and escape reactions.

Slater, James R. SOME FOOD OF SOME AMBYSTOMA MACRODACTYLUM, BAIRD. Occas. Papers Dept. Biol. Univ. Puget Sound 19: 203. 1962. [From Biol. Abstr. 41(1), 1963.] WR 109: 63

Valentine, Barry D. (Ohio State Univ., Columbus.) NOTES ON THE EARLY LIFE HISTORY OF THE ALABAMA SALAMANDER, DESMOGNATHUS AENEUS CHERMOCKI BISHOP & VALENTINE. Am. Midland Nat. 69(1): 182-188, 1 fig. Jan. 1963. WR 109: 63

Incubation period in the laboratory was at least 60 days. Hatching takes place through a weak spot in the jelly envelope, the weak spot forming shortly before emergence. Larvae emerge from the eggs already partly transformed. Larvae can hatch on land or in water. When hatched on land, reduction in gill size starts within the first hour, and transformation takes place within a few days.--From auth. abstr.

FISHES

Mohr, Eugene V. THE STUDY OF FISHES MADE SIMPLE. Doubleday & Co., Inc. (Garden City, N. Y.). 159 p., 108 figs. 1962. $1.45. WR 109: 63

The "made simple" series was prepared for persons up to high school age. This volume on fish does a creditable job of assembling striking facts and presenting them in a way that should capture the interest of the reader group to which it is directed. The book is also worthy of perusal by adult readers.

INVERTEBRATES

Likhachev, I. M., and E. S. Rammel'meir. TERRESTRIAL MOLLUSKS OF THE FAUNA OF THE U.S.S.R. Izdat. Akad. Nauk SSR (Moscow/Leningrad). ii + 574 p., 420 figs. 1952 [1962]. Published for the Natl. Science Foundation and the Smithsonian Institution by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $5.75.] WR 109: 64

Translated from the Russian. Keys and descriptions of 518 spp. of terrestrial mollusks found in the USSR.

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The Department of the Interior, created in 1849, is our Nation's Department of Natural Resources, concerned with management, conservation, and development of water, wildlife, fish, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

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